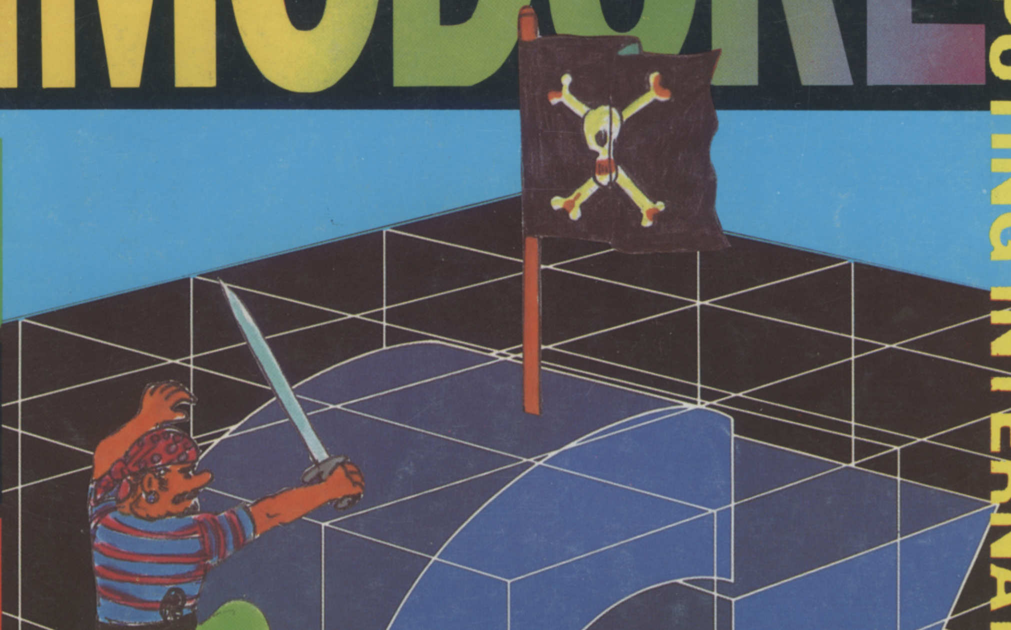
COMMODORE

COMPUTING INTERNATIONAL

JANUARY 1990



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TURBO OUTRUN
BATTLECHESS
64
AND HEAPS
MORE!!!!

TIME 0:37:40
SCORE 0045200
LAP
HI 224
2

That won't hold them for long. I'd better not go back in there.

Walk to
Push
Pull
Give
Open
Close
Look
Walk to
Pick up
What is
Use
Turn on
Turn off
Talk
Travel

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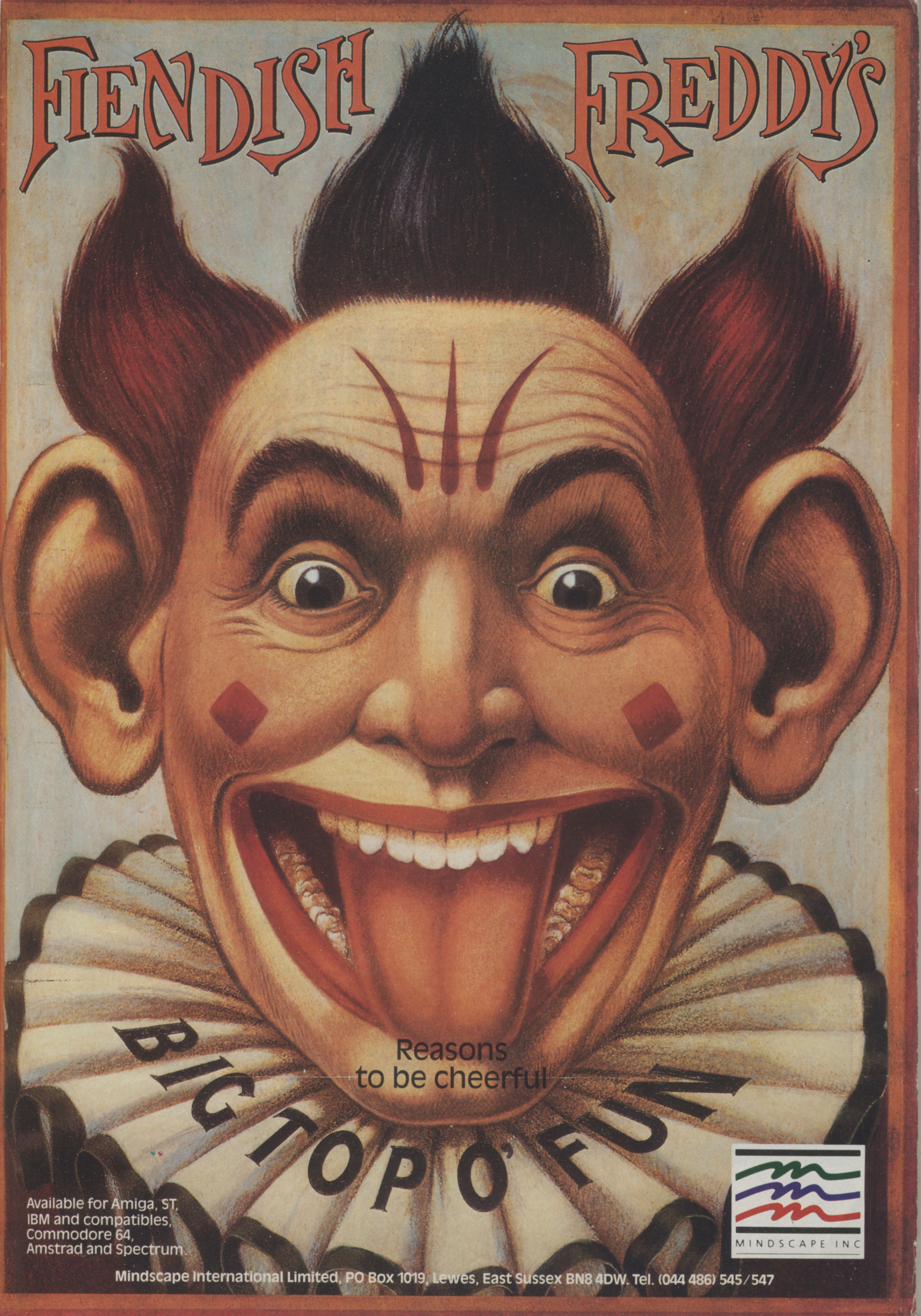
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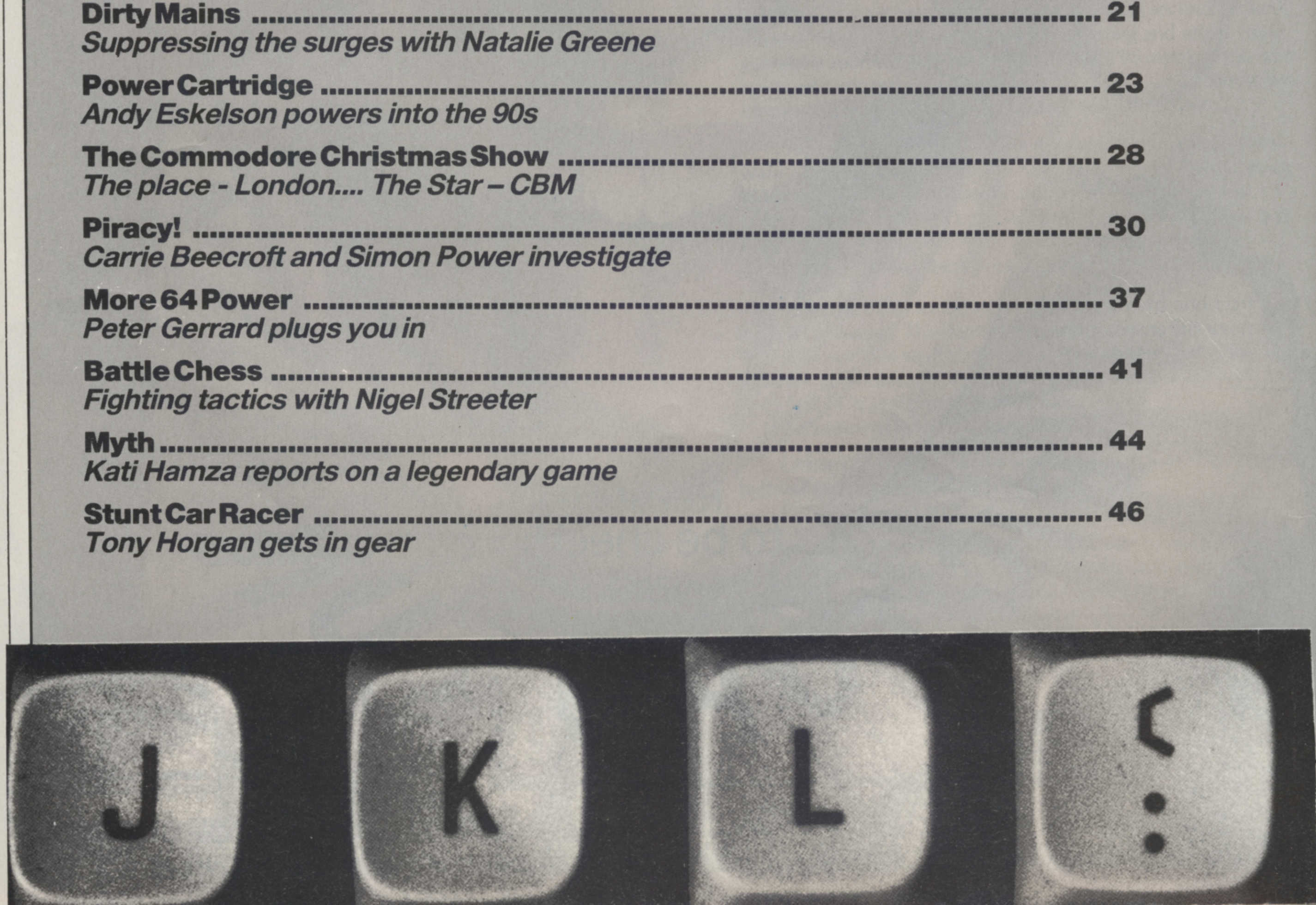

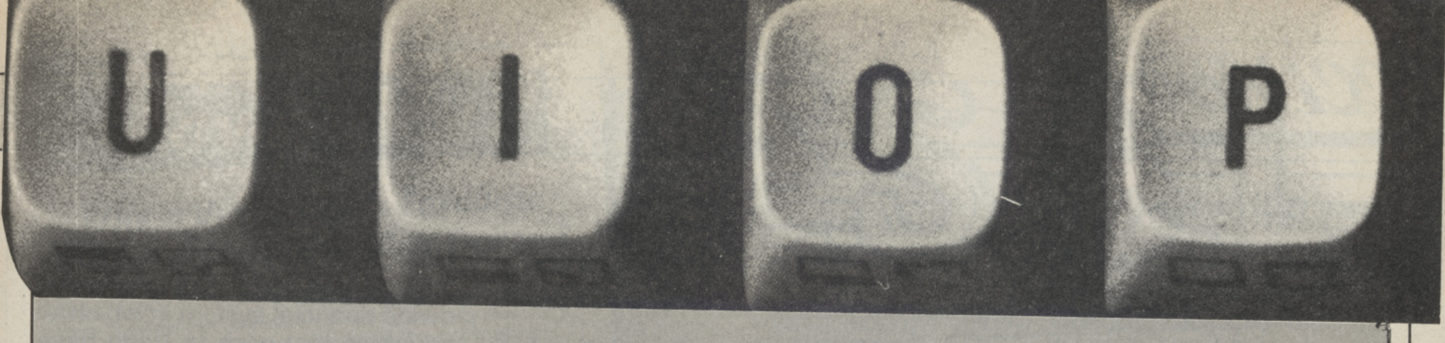

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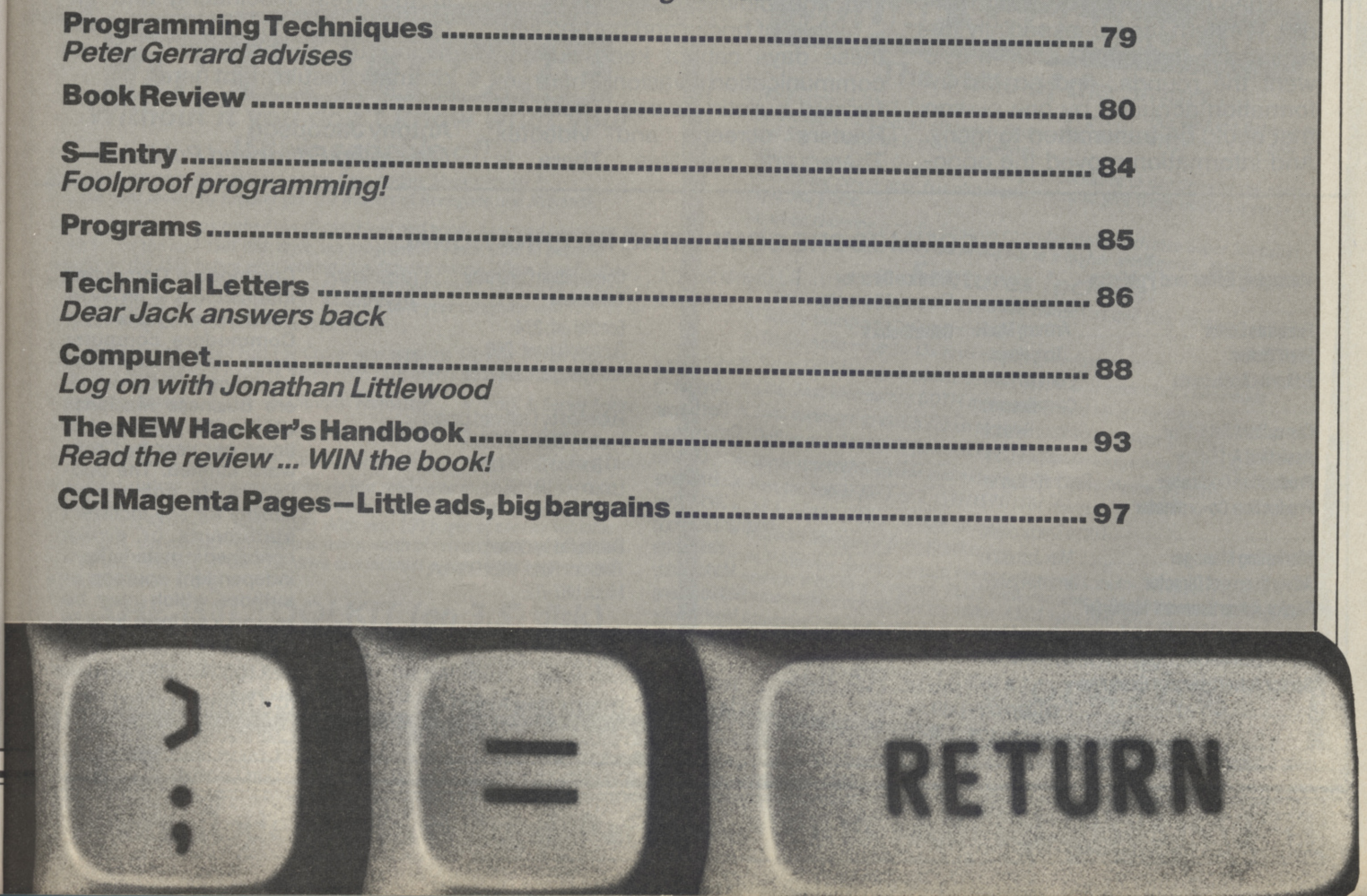

CCI View

Dear CCI Reader,

If I were to claim that the Berlin Wall has been brought down by a Commodore 64, you probably would think that I did not have both oars in the water. No, I have not gone computer bananas and started to sing love songs to my disk drive but I do maintain that the fast changing East European situation did not come about through political or even economic pressures, though they may have helped. What largely lies behind the crumbling of the totalitarian institutions of what, not so long ago appeared stone-built Communist states has very little to do with the threats or even promises of the Reagans and Thatchers. There has been another cause - communication; and to a substantial extent that means electronic communication.

It started in the Soviet Union with the passing of samizdat - illegally printed, or in many cases photocopied material, by dissidents or banned writers. You can photocopy papers quickly and easily and they can be spread privately and fast even in a police state. Democratic governments leak like sieves through photocopying and dictatorships certainly cannot keep track of everything - they are just not efficient enough.

Then came the cassette recorder. Western tapes - especially the excitingly forbidden rock music went the rounds. And so did information acquired by one person that could be transmitted to many. And information moved the opposite way too with dissidents sending their own tapes echoing around the globe.

The telephone lines uniting the whole world made it very difficult and horrendously expensive to keep tabs on everyone.

Radio and television beamed across the Iron Curtain played a role in letting Eastern Europe hear and see a different picture to the official biased version. There were too the programmes created for the West itself that were impossible to stop from "leaking" over the borders. (Some would argue that TV anyway gives us too a false picture of life - but that is another problem!).

And computers...all over Eastern Europe, you can find Vic 20s, C64s, PCs from Commodore and many other companies, often old stock purchased cheaply in the West.

Commodore has even been officially invited to demonstrate the Amiga in Moscow and *CCI* itself is subscribed to by the Library of the Soviet Academy of Sciences. Whether the old-style leaders approve or not - Gorbachev does - technology unites the world. It is genuinely a "Jeux sans Frontieres", a game without frontiers and a knockout blow for isolation.

Walls of bricks and barbed wire these days cannot keep out the communication invasion. There are fax and bulletin boards. There are Reuters screens and videotex. There are satellites. There is MSDOS. Money itself flows at electronic speed across a unified worldwide financial system in which all countries that wish to trade must work.

20 odd years ago, Marshall McLuhan coined the phrase "Global Village". That's what the world is now, and you can't keep anything secret in a village. Once people know what is happening in the rest of the world, they are a part of it. They can set their own standards by it or urge it to meet theirs;or they can demand to move toward it. Communication is what has been influencing Eastern Europe - communication, information, ideas from the outside flood in and wash away the walls, and the old leaders and their reactionary governments.

The technological, electronic revolution which has created the Global Village is far stronger than any since the Industrial Revolution. And this is only the beginning.

No, it isn't the C64 that has changed the political face of Europe but it was certainly a part, though perhaps only a small part, of the technology that did the job.

The effects the technological revolution has created across what once was the Iron Curtain are for us in the West fascinating and impressive. We will, in the decade facing us, probably see just as dramatic results right here.

Antony Jacobson
Managing Editor and Publisher

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- For GEOS v2 owners with 1581 drives, Maverick v3's GEOS Toolkit has a utility that allows you to transfer the incredible GEOS v2 over to your high speed, high capacity 1581 drive! This transfers everything, meaning you can now run the 64 or the 128 version from the 1581 alone, without using the 5¼" disk at all! And, the 800k 1581 disk leaves plenty of room to transfer all your GEOS applications over to the same disk! Essential for serious GEOS users wishing to unleash the power of Berkeley Softworks revolutionary operating environment.
- Maverick v3 now boasts 400+ parameters that either copy or entirely break potentially destructive protection schemes of some of the world's finest software. Even current Maverick owners will be amazed by the enhancements and additions made, including special RAMBOard support capabilities, exclusive to Maverick v3

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- ★ Works with 64, 128, 1541/1571/1581 drives
- ★ Technical support from our staff experts

All of these new features are in addition to the amazing array of utilities usually found in Maverick. If there's a better value product on the market, we'd like to see it.

THE NEW MAVERICK v3.0 — ONLY £24.95

Now includes parameter modules 1,2,3,4 and 5. Maverick v3 (formerly Renegade) is available from FSSL. Products which work — from a company who care.

The 1581 Toolkit

Without it you don't know what your 1581 is capable of!

It shocked everyone at a recent London Commodore Show preview — it is The 1581 Toolkit by Kracker Jax, the makers of Renegade and Maverick.

While other companies rushed out ill-conceived and poorly executed programs to "cash in" on the new 1581 disk drive, our programmers took time to become experts on the 1581 before even looking at a drawing board. When they finished the Toolkit project a full year later, they had created a tight, integrated package of essential utilities that make the 1581 fly. We'll take your computer and 1581 as far as it was designed to go, then take it further.

The Fast Data Copier and Fast File Copier now supports 1764 for 3 pass copying, 1750 for 2 pass copying and 64k Video RAM (128 users) for 6 pass copying

- ★ Fast Disk Copier
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- ★ File Track & Sector Tracer
- ★ Ultrafast Formatter
- ★ Byte Pattern Search
- ★ Partition Creator
- ★ Track & Sector Editor
- ★ Error Scanner
- ★ Relocatable Fast Loader

All of these custom utilities use extremely fast read/write routines. Where appropriate they allow full access to partitions. If you order now we will send you the 1581 DOS Reference Guide FREE! With over 100 pages of concise valuable information, this manual represents a year's worth of research and investigation into the inner working of the 1581 drive and includes a complete commentated ROM disassembly listing.

THE 1581 TOOLKIT (on 3.5" disk) ONLY £34.95

Includes your FREE 1581 DOS Reference Guide. The 1581 Toolkit, works on the C-64 or the C-128/C-128D in the 64 Mode.

Super Snapshot v4

The State of the Smart

The Cartridge Wars. For a while it was tough going — but we kept fighting to be the best. Now public opinion is unanimous, the Cartridge Wars are over — and Super Snapshot is the clear winner!

We've given Super Snapshot v4 enough capabilities to dazzle even the most demanding power user, but also worked hard to give those utilities a sense of style and grace.

So when choosing a multi-function cartridge system, choose Super Snapshot v4 — the cartridge designed to appeal to a higher intelligence. Yours!

Features Include:

- ★ Works with Commodore 64 and 128 computers and disk drives
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- ★ Super DOS Wedge supports devices 8,9,10 & 11 with extra commands
- ★ Only Snapshot dumps BOTH multi-colour and Hi-res formats
- ★ First cartridge to dump colour pictures to the Star colour printers
- ★ Define and Re-define function keys (12 function keys now supported)
- ★ Sprite disable/re-enable and extended life Game Master features
- ★ Fast file copier for 1 or 2 1541/1571/1581 drives
- ★ 24 hour BBS support is now available
- ★ Includes Shotgun II from Kracker Jax
- ★ M/L Monitor doesn't corrupt memory. Interrupt, examine, modify and resume a running program. PLUS bank-switching, bi-directional scrolling, 10 commands, track and sector editor, ASCII hunt and drive monitor
- ★ Attention 128 and 128D users — 64 disable switch now available. Allows you to boot 128 software without removing cartridge. Add £8.50.

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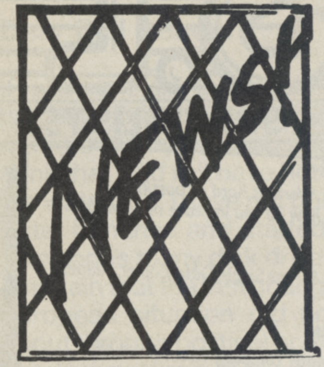
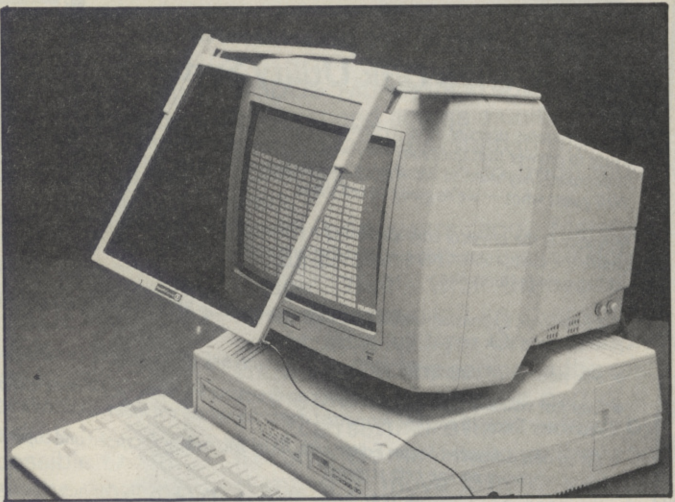


Izzy Wizzy gets Bizzy

Alternative Software announced the signing of their latest licence acquisition, 'Sooty and Sweep' (and Friends). The Sooty TV Show is the longest running TV series in the world.

The game features an easier version for younger children and a harder version for the serious game player (or parent). the game will also contain the oringal TV Theme Music and/or sound effects depending which option.

You can either play Sooty or Sweep and play aginst the computer or you can select the 2 play option in which each person can either be Sooty or Sweep. The game is played aginst the clock and involves the collection of Sweep's "dog bones" from around the house before Matthew gets home and catches our little mischievious friends. Price £2.99 (C64).



POLAROID MONITOR FILTERS

Polaroid claim their CP-Universal VDU screen filter "suppresses up to 99 per cent of reflected light, reducing glare and improving contrast on virtually all types of display". It is available from Action Computer Supplies at £129.00, and a free pair of Polaroid sunglasses is currently offered by the manufacturer with every screen ordered.

Glass-based for durability, the CP-Universal is a circular polarising filter, with a vapour-deposited, anti-glare layer, and an anti-static conductive coating.

It is fitted with a hinge-type universal mounting which allows flexibility in fitting, so that only two sizes are needed to fit monitors with up to 15-in screens. the mounting also allows the screen to be easily and quickly removed for cleaning.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333.

Brad Stallion Thrusts Again!

Free Spirit Software has announced the release of Bride of the Robot, a new adult, graphic adventure game for the Amiga. This is the third Captain Brad Stallion adventure, combining twisted humor, colourful grapics, and a strong storyline into what is, say Free Spirit, at times a sinful, graphic adventure.

Once again you take on the role of Captain Brad Stallion, owner and operator of the one-man space vehicle known throughout the entire galaxy as "The Big Thruster." As the story begins, you are stumbling around a moon of Mammaria, trying to forget your hangover and find your ship. Suddenly an urgent message informs you that Miss Galaxy has been kidnapped by a runaway robot. A robot with a sex drive! It was a new development by Professor Wang — but something went wrong. The robot went berserk, killed Professor Wang and kidnapped the new Miss Galaxy. It is your mission to rescue Miss Galaxy and neutralize the robot. It's a tough mission, and you'll have to use your head to charm Charlotta, Enchantra, and your brain to find Miss Galaxy, but the Federated Government is counting on you.

Bride of the Robot is available now for the Amiga with a suggested list price of $39.95. 1MB of memory is required. With over 50 graphic screens, new title music, and an array of sound effects, this may be Brad Stallion's greatest challenge, say Free Spirit.

Contact: Free Spirit, PO Box 128, 58 Noble Street, Kutztown, PS 19530.
Tel: (215) 683-5609.

Interplay's Dragon Wars

Interplay productions have announced the release of Dragon Wars, a roleplaying game for C64.

Dragon Wars offers detailed graphics and animation and features a combat system adapted from the popular pen and paper super-hero role-playing adventures. This system permits the player to choose the level of combat resolution, determine spell strength, and select tactics of ranged combat.

Dragon Wars is set in the humid world of Oceana, 85% sea and dotted with islands. the most legendary realm of these isles is Dilmun "the land where the sun sets". Every tale suggests the streets are paved with gold and no one wants for anything. Like so many would be heros the player's ambition to travel to Dilmun in search of a better life.

At the first port of call the player and his party are dragged from the ship by merciless guards, stripped of their citizen papers, weapons and wealth. These ugly characters are under the command of King Drak of Phoebus, ruler of Purgatory, the underworld. The once kind and King Drake has begun conquering surrounding islands in an apparent effort to rule Oceana. He has declared, without reason, that qall magic is forbidden. Magickers have been slain or have fled into exile. Several islands threaten to unleash their guardian dragons — beasts who are believed to be the mighiest deterrent of attack and the most desstructive force in Oceana. Dilmun, the home of all that is best about Oceana, is in jeopardy of self-destruction as chaos reigns supreme. It is up to the player to find out why magic is illegal and to stop Drake's conquest.

In addition to featuring pop up windows and an automapping mode — which does away with the traditional pencil and graph paper mapping, players can use Characters created from Bard's tale I, II, and III.

Price £14.99 only.

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— Dogs name — Date of birth — Breed — Colour — Kennel Club No — Family tree details — Family tree line.

Contact: Pedisys, 1 Parsons Walil, Stewkley, Leighton Buzzard, Beds, LU7 0HQ. Tel: 0525 240300.

Think Again, Again, Old Boy!

We had a call from UK software house Again and Again, long distance from Australia they claimed. What they said went like this: "G'day Cobbers, now here is your very own opportunity possums to take part in the worlds most aggresive team sport. The sun's shining and the Aussie crowds are eagerly awaiting what promises to be an electric game of Aussie Rules footy.

Team's from New South Wales, Queensland, Victoria and South Australia, fight their way and I do mean fight in two completely separate games to be at the toup of this tough Aussie all action league.

Battle it out in the Outback Amateur League making sure you don't get grabbed by the Wallabies, or Cobbers if you're an even tougher footy player, flip the cassette "down under" so to speak, where more teams competeover an even more tougher explosive season to climb 'the U.F.L. Victorian Football' league to win the prestigious Victoria Cup.

So Cobbers stop trying ya kangeroo down sport, stop waltzing with Matilda and leave the Sheila's alone too. You need a plentyful supply of Amber Nectar, the Shrimps on the barbie and switch off Neighbours and get down to some real action sport stuff 'Aussie Rules Football'.

G'day to you all possums! "It is time that UK people stopped thinking about 'down under' and clichés and stereotypes, don't you think? Or to sell British software do Australians have to be given the idea that in the UK we all wear bowler hats and sleep with our umbrellas?

Freezer Screamer

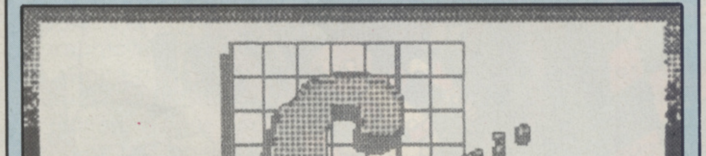
The 'Audio & Video Guard' anti-theft alarm, is a compact security unit for protecting appliances that are connected permanently to the mains.

Ideal for videos, microwaves, computers, hi-fi, and freezers, it can be quickly fitted.

The unit is based on a electromagnetic current sensing strip which detects the absence of electrical power in the event of the appliance being switched off, unplugged or if the cable is cut.

The result is a loud piercing alarm that will sound for 45 seconds deterring any would be thief, and alerting the household. It will automatically cut off and reset.

This appliance requires no wiring and is powered by a P33 battery. Price £14.95p.

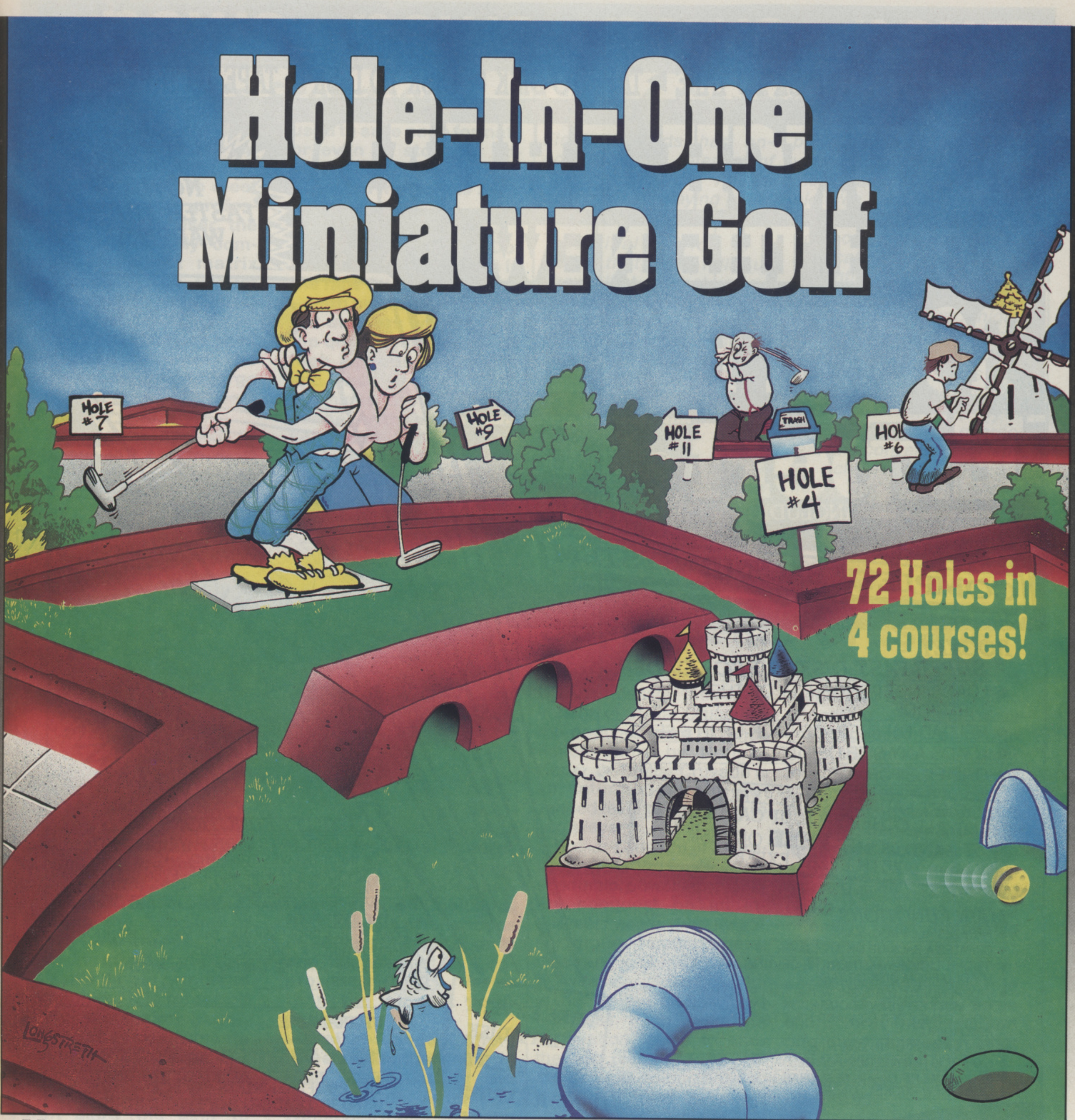


Pure Color for the Amiga

Tired of guessing what screen colours will look like when translated by your colour printer? With PURE COLOR, the guessing is over! PURE COLOR lets the artist know exactly what colour will be printed without experimenting with different palette settings.

PURE COLOR is a collection of printer palettes designed for graphic artists or anyone with a need for colour hard copies. Each IFF screen holds 32 different colours or shades of colours that can be printed to give the Amiga artist a convenient colour chart for quick reference. Each colour is clearly labelled with the numeric setting for RGB. There are over 500 different colour settings as well as 160 dot pattern settings (PURE COLOR will let the user manipulate the dot pattern created by any type of printer) and a newly added Qusi-HalfBrite chart. (Simulates 120 colors per hi-res screen.)

Although PURE COLOR was designed for Ink-Jet printers, it works well with any type of printer. (PURE COLOR prints at the printers highest resolution and is only limited by the number of colors that the printer is capable of producing.) PURE COLOR is not a printer driver but a collection of IFF compatible screens that are used as a color reference guide. PURE COLOR was designed by graphic artists using Delux Paint II and is compatible with Amiga DOS 1.3. Price £17.95. Contact: Graphic Design Studio, 417 Transcontinental Dr. Metairie, AL 70001 United States. Teo 504 455 0341.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HOLE #11
TRASH
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LONGSTRETH

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Utilizing the mouse (point and click) interface, DigiTek Software has created a game that will challenge adults yet is so simple to play that children can play as easily as adults from the very first game. This game supports up to 4 players making it one of the few games that the entire family really can enjoy together.

Hole-In-One Miniature Golf is 144 Holes of pure fun in 8 separate courses that give you classic miniature golf as well as hilarious fantasy holes. The digitized sounds of the crowd, the ball, and special effects all add to the fun and realism.

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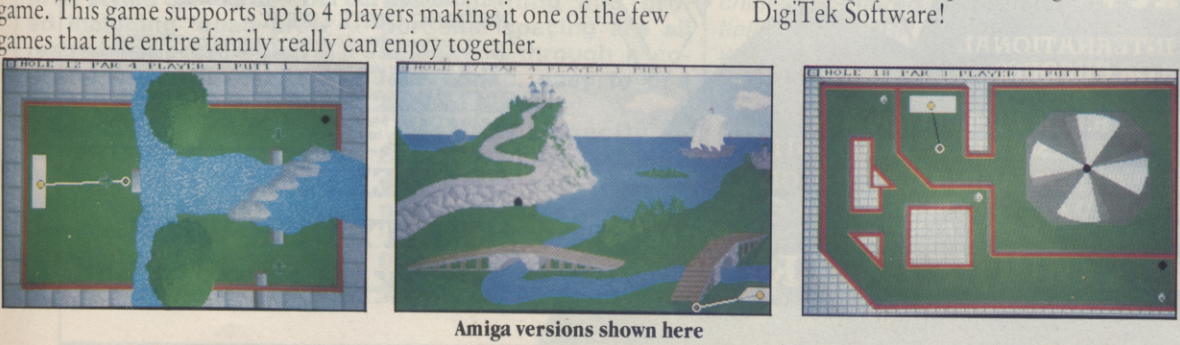
HOLE 12 PAR 4 PLAYER 1 PUTT 1
HOLE 17 PAR 4 PLAYER 1 PUTT 1
HOLE 18 PAR 3 PLAYER 1 PUTT 1

Amiga versions shown here

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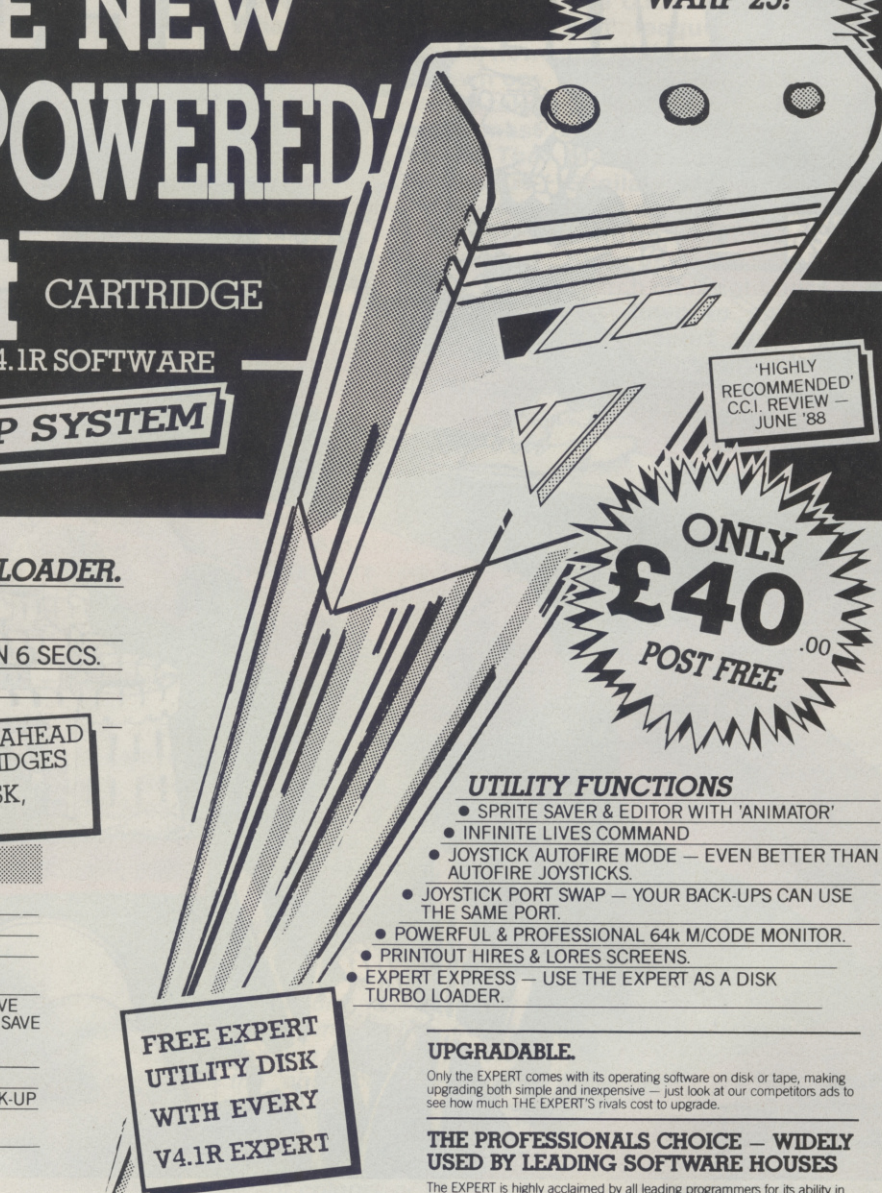

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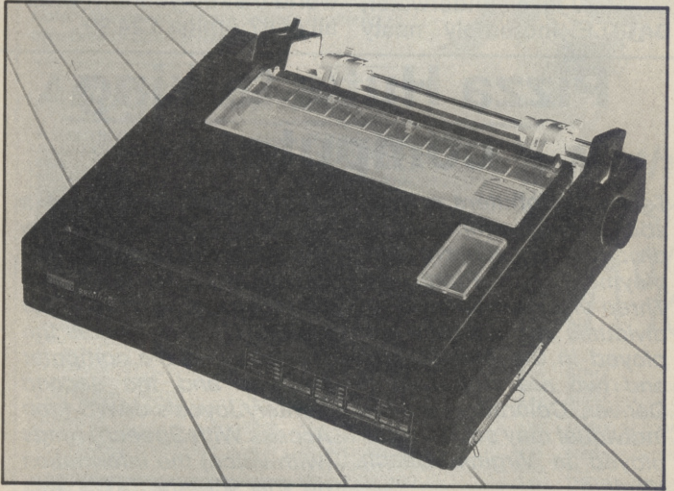
Citizen's ProRange

Citizen Europe have launched a new range of printers called the ProRange. Designed to meet the needs of the professional business user, the range will initially comprise three dot matrix machines — The ProDot 24, ProDot 9 and ProDot 9X.

The ProDot 24 has been designed to meet the needs of medium to large business users and costs £599 RRP (exc. VAT)



Printing at speeds of 240 cps (12 cpi) in draft quality and 79 cps in letter quality, the ProDot 24 — an 80 column, 24 pin printer — is both fast in output, allowing the handling of heavy workloads, and high in quality utilising Citizen's 24 pin printhead technology. It is targetted at the professional user, government departments and higher education.

Five standard fonts in letter quality and two in draft allow the user to select their favourite or company standard font and with the introduction of an optional colour kit, can begin to design and mould the look of their document. A variety of print styles can be selected including 'quad print' (extra large print) which is useful for headings and a graphics capability of 360 × 360dpi.

The ProDot 24 has a non-volatile memory which will hold information even when the printer is switched off. It can be used to save page formats or even to store an additional downloaded font. Standard memory is 24K.

ProDot 9 and ProDot 9X

The ProDot 9 and ProDot 9X are the 9-pin models in the new Citizen ProRange — both printers are targetted at users who require top quality combined with high speeds, reliability and ease of use. These machines are for heavy usage with an RRP of £439 and £559 respectively (exc. VAT).

The ProDot 9 features an 80 column carriage and the 9X a wider carriage of 136 columns. Both models offer speeds of 300cps (12cpi) in draft and 60cps in NLQ — approximately 12% faster than the closest competition.

ProDot 9 and 9X offers three residential fonts in Near Letter Quality and one in draft. A host of typestyles includes a new 'quad print' feature allowing quad height and quad width printing benefitting headlines and title printing. Print commands including the choice of condensed, expanded, reverse printing and proportional spacing are all selectable through a colour coded, easy to use control panel.

Memory capacity is 8Kb, on which the user can download his/her own characters.

Contact Citizen on 0895 72621.

C64 Sentinel Worlds

Electronic Arts has announced the release of Sentinel Worlds: Future magic, a role-playing game for the C64.

Sentinal Worlds is a game that E.A. tells us shows that characters in a fantasy game can be as rich as characters in a novel. "The program has strong graphics with smooth animation, and benefits from sound track and special effects to enhance the action.

It takes players to a 3-planet system that is constantly harassed by raiders from an unknown source. As players explore locations on starships and planets, the screen displays a map of the person view of the terrain, one of the 85 animated character pictures, motion and radar scanner data and information on weapons, communications or combat.

Sentinel Worlds allows the player to build a team of five with their own unique traits, experiences and appearance. Team strategy depends on the traits and the traits and the training program the player chooses. Dynamic characters and conversations lead to rich personal interactions. The program allows the player to interract with non-player characters who have individual personalities. Price, £14.99 disk only.

SSI's Stellar Crusade

Strategic Simulations in the US has released the Amiga version of Stellar Crusade™, the popular space/science fiction game by Norman Koger, Jr. Stellar Crusade is an intermediate to advanced level game for up to two players.

Stellar Crusade is a strategy game of exploration, economic power and military conquest on an interstellar scale. Two fanatical groups embark on a mad race to control a small, but vital star cluster. As the leader of one faction, your first task is to send out exploration teams to grab the best planets in the star cluster and colonize them. Next, you must build up your economic strength to prepare for war. This entails allocating raw materials and production points to build shipyards and maintenance facilities; train and supply troops, engage in research and development; establish farms, mines, refineries and factories. To win a star war, you need starships. Design your own and equip them with a host of offensive and defensive weapons.

There are seven different scenarios with multiple levels of difficulty: three short, three medium, and one long campaign that spans decades.

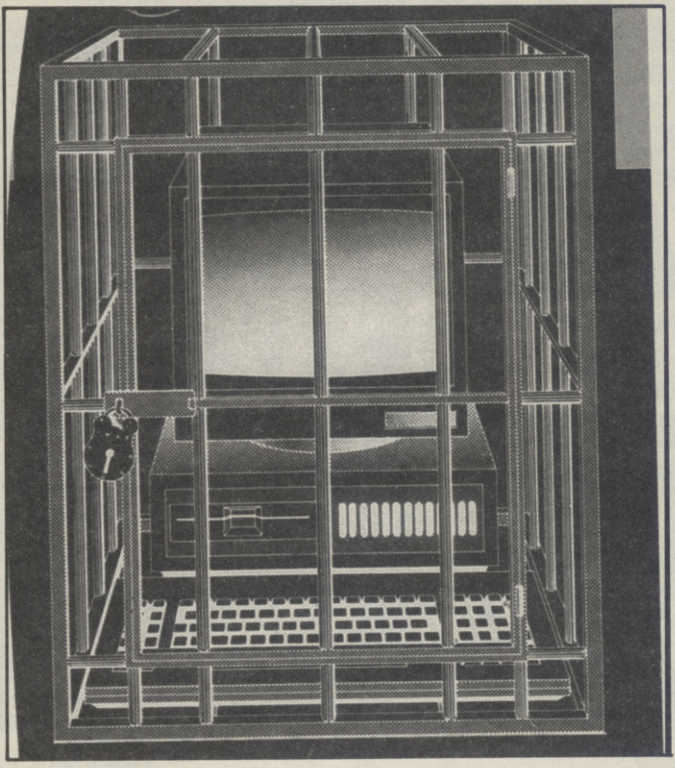
Price: Amiga $54.95.
PC $49.95.

Star's 9-pin and 24-pin printer

The Star Professional Printer Range includes two 9-pin and two 24-pin machines, all offered substantially below MRP with two-year warranty. All feature the EE-Prom Memory Switch and advanced paper parking, and options include serial interfaces and colour kits.

The XB24-10 (left) and XB24-15 have 24-pin heads using a 48-pin pattern to produce high-quality output. Print speeds are 240cps draft and 80 cps LQ. Features include 25 resident fonds, with four in LQ mode, a 360 × 360 dpi graphics facility, a 27 KB buffer and OCR/barcode ability.

Contact: Action Computer Supplies, Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx, HA0 1WL. Tel: 0800 333 333.



There must be twenty ways to keep your data...

To help PC users protect vital corporate data, Price Waterhouse is issuing a free checklist of 20 basic rules for personal computer security, aimed at new and experienced PC users.

Price Waterhouse tell us that their Guide To Personal Computer Security covers housekeeping procedures and security principles which protect valuable corporate and personal data against unauthorised access, corruption and loss. simple procedures recommended in the checklist of housekeeping rules include setting up non-smoking areas around PCs, and making sure that they are located away from sources of heat such as sunshine and radiators. The guide also recommends security procedures including tight control of communication equipment and software, to minimise the much publicisedrisks of hacking, as well as implementation of access controls. Eavesdropping and disaster recovery are also covered in the guide.

David Frost of Price Waterhouse is quick to point out: "Although the rules are a good starting point for PC users and deal with the most common problems, they are no substitute for a thorough review of corporate data security".

Be nice to Dolphins ... Save the World

Addictive Games launches "Aquanaut", produced by Fissionchip, creators of "The Kristal".

Aquanaut is an interaction arcade adventure, written in the spirit of the 1940's cinema heros (Buck Rodgers, Flash Gordon et al ...), but taking place deep under the ocean, in a maze of underwater caverns and then in the fabled city of Atlantis.

Aquanaut you must: SWIM 20 miles underwater, BATTLE incredibly nasty creatures, FIND the lost city of Atlantis, AVOID Mutant sharks, swordfish and jellyfish, HUNT for hidden clues, SMASH the Ramanishi, BE NICE to dolphins and mermaids, SHOOT your way to victory, SAVE the world.

Aquanaut will be on 3 disks. Addictive claim that if you surmount the perils of the deep with clever strategy and slick joystick control, and the underwater world can be yours ... what all of it? Amiga £24.99

Pizza Hut's talking computers

Talking computers are enabling visually-imparied individuals to achieve employment with Pizza Hut. Three visually-impaired individuals are currently employed in the Atlanta area and two are employed in Denver, Colorado. Another individual may soon be employed in Virginia Beach, Virginia.

Pizza Hut's telephone sales and service representative positions require responding to all customer orders on a computer terminal. In order to respond to an order accurately, the sales representative must read as well as enter data on 21 different lines of information.

In conjunction with Ted Henter (Henter-Joyce, INc.) and Jack Gilson (DRS Georgia Sensory Rehabilitation Centre), CRT's John Goldthwaite substituted a personal computer (PC) for the Pizza Hut computer terminals and installed two software programs. The first, ATeleterm, makes the PC behave like a computer terminal and the second Henter/Joyce's JAWS (Job Access With Speech) reads (with voice) the information on the screen. JAWS was selected for its facilities for creating customized commands. A whole series of commands were also written to enable the user to access any line on the screen with the strike of a single keystroke. The end result: the sighted and visually imparied employees work with equal efficiency and speed!

Contact: CRT, Georgia Institute of Technology, 244 Round Street, Georgia, USA.

Dialatron Faxlink

The Dialatron Faxlink allows both a telephone and a facsimile machine or modem to be used on a single telephone line. It incorporates a voice synthesiser and can distinguish between a normal telephone call (voice) and a fax call (data). It automatically switches incoming calls to the correct piece of equipment.

The Dialatron is no larger than a household box of matches, comes with two self adhesive pads which can attach the unit on the side of the fax machine. It is supplied complete with a mains adaptor and incorporates all power on LED.

During incoming calls a message welcomes the caller and asks for either a fax transmission to be made or for the caller to hold for connection to a telephone. Faxlink recognises automatic fax machines and immediately routes these transmissions to the fax. For conventional conversation, Faxlink tells the caller that he is being connected to a telpehone. If the telephone is not answered after approximately 10 rings, Faxlink asks the caller to try again later and disconnects the call. A telephone answering machine can be connected to Faxlink.

Contact: Computer Acustics, 17 East Place, West Norwood, London SE27 9JW. Tel: 01-761 6117 Fax: 01-761 5889. Price: £84.99 including VAT.

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Amiga Format

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Crash Magazine

Myth Reviews

Commodore User 90%, Amiga Format 87%, TGM 85%

Myth
Crash
91%

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Dr. T's "Class of the 90's"

Dr.T's Music Software "MIDI Recording Studio" has been chosen to be a part in a new promotion by Commodore UK Class of the 90's is Commodore's latest foray into the educaiton market. Commodore has just purchased its second order of MIDI Recording Studio programs from Dr. T's bringing the total number of packages to5,000.

Commodore has taken to heart the lessons taughtso well by Apple in the US and is moving strongly into the educational field with a package consisting of an excellent collection of useful software packages. These programs, bundled together, are being sold by distributors to the schools in the United Kingdom at a ??? price in an attempt to capture a significant share of the educational market.

Al Hospers, CEO of DR.T's Music Software (one of the world's largest manufacturers of computer music software), said about the education package and the Amiga in general; "This is a great collection of software applications. Commodore has a strong chance to leap ahead of Apple in the educational computer field now. they have the strong color graphics, sound, and animation that the schools want now for the children. And as far as sound goes, they are way ahead of anyone with their super samples. And of course the built-in multitasking combinations of music and sound. this is a very strong machine!"

This is the first time that an American software house has worked with Commodore UK in this manner. "I think that there are a number of ways software companies can work with the hardware manufacturers to edxpand the marketplace", says Hospers. "We will be working closely the Commodore both in Europe and the US to expand Amiga computer sales. We feel that The Amiga is the computer best positioned to take advantage of the new surge in multi-media, and we plan to be part of it."

Dr.T's has also announced a number of new products for the Amiga. The Keyboard Controlled Sequencer revision 3.0 which contains numerous enhancements and revisions incluidng support for SMPTE time code, full intuition interface, and a direct link with other Dr.T's applications through their Multi Program Environment; Phantom SMPTE synchronizer box which allows KCS or other compatible video and music software to sync to an audio or video tape; and AutoMix,m a compugter controlled mixing panel for doing automated volume and controller mixes of music. Contact: 220 Boylstgon Street, Chestnuat Hill, MA 02167 USA. (617) 244-6954.Fax: (617) 244 5243.

Red Sunday

On Red Sunday, April 30, 1989, ten newly appointed Vice Admirals competed against the Russians, each other and the clock trying to achieve victory in the Red Alert War Game. The winner would become more than Admiral of the Fleet as victory included a trip for two to the UK and see some of the submarines that are present in Red Storm Rising.

Red Sunday and the Red Alert War Games were the culmination of the Red Storm Rusing Ultimate Challenge sponsored by MicroProse and Commodore Magazine. MicroProse received over 500 completed entries. The 15 top entries were promoted to Rear Admiral. Four Naval Examiners chose ten f the Rear Admirals to be promoted to Vice Admirals to play the Red Alert War Game on Red Sunday. ON that day, each Vice Admiral had four hours to successfully play 16 different battles. Ranging from tough to nearly impossible, these 16 special battles were created by Roy Gibson of MicroProse US for this event.

Mike Kwiatkowski was the eventual winner, successfully completing 11 out of the first 12 missions with no damage to his submarine. His prize was an all-expenses paid trip for two to the UK to visit, among other places, the Submarine Museum in Portsmouth. Responsible for nearly all of Naval history, from pre-Trafalgar to present day, Portsmouth was the ideal place for 'possibly the best Red Storm Rising Commander in the world' to visit.

Red Storm Falling?

MicroProse's submarine simulation, Red Storm Rising, based around Tom Clancy's best-selling novel of the same name is set for release on the Amiga.

With Tom Clancy providing technical guidance, the computerised Red Storm Rising focuses on the tactical operations of an American nuclear attack submarine in World War III. In the primary game scenario, the USSR is intent upon disrupting the trans-Atlantic shipping of US reinforcements to NATO after a crushing invasion of Westernb Europe by the massed hordes of the Warsaw Pact. The submarine commander's mission is to locate and destroy Soviet submarines as they leave their base near the arctic circle, before they can reach the Atlantic.

Sid Meier, MicroProse's co-founder and foremost designer of military computer simulations, who has worked on this project, was also responsible for Silent Service, MicroProse's classic WWII sub sim. According to Sid, however, the difference between the two scenarios is vast. In Red Storm Rising, for instance, you have access to vast amounts of vital information concerning the latest Russian subs, as well as 'smart' torpedoes and sonar that can categorize subs by their accoustic 'signature'.

Throughout the game, the player can access large scale strategic maps and animated screens to observe how his tactical successes and failures are affecting the progress of the war. Knowing that his efforts affect the overall picture compounds the player's excitement and involvement in the game. Price £24.95. What is going to happen to all these fearsome cold war epics when all the Communist countries go 'West', who will be the enemy then?

Hyperforce is blistering stuff

Hyperforce is a new release from Addictive Games. They tell us, with some enthusiasm.

"Hyperforce is a wicked arcade challenge over 30 levels of hectic, wrist-twisting, finger-bending action. Hyperforce has stunning graphics and sound, and is probably the nearest a home computer owner can come to arcade action without putting coins in a slot.

Hyperforce also includes 5 mind-boggling puzzle levels to twist the mind as much as the rest of the anatomy".

Addictive games points out that no one should attempt Hyperforce without first warming up their game-playing skills. For this reason every Special Limited Edition pack includes a free warm-up kit:- "Artificial Dreams" — a shoot'em up with a MEAN catch 22 twist — to play the game you must shoot your way through a maze, but you must find your way through the maze to play the game ...!
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THALAMUS

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By Rob Stevens

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SMT - What is it?

Circuit boards. They radiate little or no charisma, cause many a glassy stare and are, generally, one of the last subjects brought up at parties. However, they are the key to many of the technological wonders we all take for granted. "Fine", you say, "so can I turn the page now?" - Well, hang on a tick because circuit boards are going through an important evolutionary change, just at the moment, which will affect how they are actually constructed. Making them cheaper to produce and to buy. As computers are one of the principle products of circuit boards this will, naturally, mean that computers will cost less to produce. So what's going on then? SMT, that's what.

If you have ever taken a look inside your C64, Amiga or PC you may have noticed two things about the general layout of the chips on the circuit board. Those chips that do not have a plug or socket into which they can be pushed into are normally soldered onto the circuit board itself. Well, not quite, because if you have ever seen the back of the board you will have noticed that it consists of nothing but spikey bits of wire and solder. In effect, the chip's "legs" have been inserted into numerous holes, specially prepared for it and then they have been fixed to the board by solder. This process of attaching chips to boards is all well and good - *was* all well and good, that is, until the introduction of SMT - Surface Mounted Technology.

SMT is very simple, in fact you may think "why the fuss?". SMT chips are actually mounted to the *face* of a circuit board. There are no holes involved. A simple, yet very important difference. Malcolm Penn, who is the managing director of a consultancy firm in Sevenoaks agrees, "It sounds like an extremely simple change but it is having far-reaching effects in terms of size, cost and reliability."

Dr. Theo Peek, director of colour television product engineering at N.V. Philips, Eindhoven in the Netherlands summarised the advantages of SMT, "Size is money. Surface Mounted Technology means fewer and smaller printed circuit boards. That cuts costs. It's not surprising that everybody is enthusiastic about SMT. It means improved quality and reliability. That's the reward when you reduce the number of connectors and the wiring on a PCB. A year or so ago, SMT was regarded as expensive. Now, demand for this technology is so big that the volumes are helping to push the prices down. In fact, nowadays, an SMT board is usually cheaper than a conventional PCB."

According to the semi-conductor wing of Siemens AG, in Munich, West Germany the fastest growing sectors of SMT are entertainment, military, high tech and automotive. Siemens senior manager, Werner Maiwald, commented that, "SMT is particularly valuable where devices have high pin counts because, with these, through hole (the usual way of attaching chips) solutions simply don't work. "SMT meets the needs of small companies who want to increase production by automation. They can start with entry-price placement machines that handle just a few tens of thousands of components an hour. This enables the user to acquire experience before moving up in the scale."

Using through-hole technology a company would need two or three machines, which would cost around £800,000. With SMT, the same company can achieve the same performance with a single machine for less than £250,000.

Maiwald added, "Using SMT, it is rare to have bad components on the board. There is no risk, for instance, of diodes being misplaced. We can measure the flow of current and then turn them in the right direction. The same rule applies to capacitors. In our experience, fewer than 20 parts per million go missing or are faulty. This eliminates the need for incoming testing for components."

So SMT is on the up. With the ability to pack more chips onto the board. In addition, if you are not going to be pushing chips through the board then there will be no untidy spiky solder legs protruding out of the other side. This clean smooth back can be easily used, therefore, as a whole new surface for another board full of components. Two boards for the price of one!

With any technology you will find the innovators, the people who take full advantage of the product to gain economic advantage. SMT is no exception. So who has taken this particular bull by the horns? Yes, that's right, Japan.

"There's a fair amount of innovation in Japanese surface mount technology (that is) fueled by the desire to make - as the Japanese put it - lighter, smaller, thinner and shorter consumer electronics products..." says John Stern, vice-president of Asian Operations at the American Electronics Association."

It appears that Japan sees SMT as a tool to enhance the dominance they have over the consumer electronics market. One example, Matsusita Electric Industrial Co. Ltd (who just happen to be Japan's largest consumer electronics company producing, among other things, disk drives) are actively developing a technique known as Tape-Automated Bonding.

TAB is carried out where a small lead frame forms the semi-conductor printed circuit board interface. At the moment it is expensive to set-up and is not in wide use. However, TAB may allow the integration of SMT to very-large integration devices such as memory chips and microprocessors. Mitsibushi Electric Corp. recently developed the world's smallest 1-Mbyte DRAM which is four times smaller than its predecessors and runs at 70 nanoseconds. An ideal chip for future mini-laptops - are you reading this, Commodore? Apparently this particular chip is already being manufactured to a monthly quota of half a million units. This turnover is hoped to reached two million by the beginning of next year. The price for such a beast? Well it will be priced at four times that of the present large units but lower prices should follow soon.

Another area for investigation is ICs (integrated circuits). TDK, the world's largest magnetic tape producer have announced the multi-layer hybrid circuit. The company stated that, "Our unique MHC - an equalizer for Walkman-type stereos - contains an IC produced by Toshiba along with 16 capacitors and resistors manfactured by our multi-layer lithographic technology."

Therefore the overall circuit would be smaller, as would its complexity. Smaller Walkmans are produced, therefore, or the company might be able to squeeze another feature in there which may force them ahead of the competition.

SMT is by no means a new technology. It was only used in specific applications and was more expensive to produce than through-hole technology. However, it looks like the time is ripe for companies to take advantage of this simple, yet, effective, technique. SMT is not perfect. There have, in the past, been problems with heat sensitivity and mechanical strength, but these handicaps will sharply decrease during the coming months as new advances are expected to come to fruition. So, as SMT matures, expect to see greater use being made of its potential and more people talking about circuit boards at parties.

P.R.

cicero plus

For a number of years the PC software market has been dominated by either US or UK software houses. The latest release in the Wordprocessor market goes against this tide. CiceroPlus is the wordprocessor package from the Swedish software company RTB Program. The CiceroPlus package has been available in Sweden since 1987 and has sold 5000 units in that country. RTB Program has now opened offices in Fetcham, Surrey so that they can now market the CiceroPlus package in the UK.

The CiceroPlus package itself is a combination of a wordprocessor, a spreadsheet and a database. What then is different about CiceroPlus from the other multi-function packages on the market? Two words – Help Lines, these are a feature unique to CiceroPlus and are used in helping to format the document.

The Help Lines appear on the screen but are not printed, unless required. The lines can either be vertical or horizontal and help to show where on the page a piece of information is to be placed. The lines then make the document take the form of a template from which the list of possible uses can be endless. Letters, tables, invoices, agendas, databases and even TV scripts. The Help Lines are also used to create columns in a document, which can then hold numeric information, calculations can then be performed within or across the columns. The columns then go to make up the columns of the spreadsheet and can therefore be addressed by use of a letter in the standard way.

The wordprocessor functions are standard and all actions are selected through simple menus or function keys. On loading the software, the text screen is displayed. This again takes a fairly standard format with all but the top line used for text. The top line contains status information about the file being used and the style and position of the current character being typed.

The package includes a number of advanced features such as automatic hyphenation and a mail merge facility, it also includes other features not available on other well known word processors. CiceroPlus holds all deleted text, within a session, in a waste area so that it may be retrieved should the need arise. A window option is also provided which allows two or more text files to be opened at the same time. Text can then be transferred between the two files. To avoid overwriting a file when in the window mode, the file can be write protected. Finally, CiceroPlus is one of the few wordprocessor packages that supports the use of a mouse for movement within the text. What then does CiceroPlus not have. To begin with it is not a 'What You See Is What You Get (WYSIWIG)' package and therefore Font changes are not visible until the document is printed. It also does not appear to have any text import or export facilities.

CiceroPlus is easy to use and learn and the twenty minutes quoted in the literature is certainly not an idle boast. However, CiceroPlus is by no means a cheap package, at a cost of £295 plus VAT, it is probably excluded from the home market, but unfortunately it does place it amongst the other sophisticated packages popular with business users. It is going to be hard for CiceroPlus to break into an area of the software market which may already be overpopulated with products, but it is certainly a worthwhile package. ***L.K.***

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DIRTY MAINS

Are you suffering from "spikes and surges"? No, don't consult a doctor, says Natalie Green, go for "safe computing" with supressors

If somebody were to tell you that you could be suffering from a problem that could cause you anything from a minor inconvenience (interruption in the middle of your favourite computer game) to a major catastrophe (such as the premature breakdown of your computer with the destruction of valuable software or data) you would, no doubt, be interested. There is a common cause to these situations, and many more, which can be eradicated with relative ease and little cost.

"In many cases these problems are caused by what is commonly called "dirty mains""

In many cases these problems are caused by what is commonly called "dirty mains" - electrical pollution in the supply. This, in engineering terms, is called, most commonly transient spikes, voltage spikes or voltage surges. The definition of a spike is a voltage pulse that exceeds the normal line voltage (in the U.K. the line voltage is 220/240 volts A.C.). Although these spikes are normally of a very short duration (up to several microseconds) they can wreak havoc on sensitive equipment.

Clearly such spikes are likely to be of interest to computer users, as they can be responsible for damage to both hardware and data (in memory, on magnetic media or during transmission).

THE CAUSES OF THE PROBLEM

Spikes can be caused either locally or from a distance. The most common local cause is the switching of any inductive load, especially equipment with electrical motors such as washing machines, fridges, power tools and many other household items. Other items in the home can cause voltage spikes by switching effects, especially appliances such as immersion heaters and other items where the use of a thermostat means that a sharp "make" or "break" in the circuit does not occur.

Industrial premises, whether office or factory, also have equipment which generate spikes. However due to the nature of the equipment involved, the energy contained om each spike is higher than encountered in a domestic envoirenment and thus the risk of damage greater. Relays, transformers, solenoids and solid state A.C. switches can also be responsible for spikes.

These problems are compounded by the voltage spikes that are created externally to our homes and business premises. A very common problem is that of one user "exporting" spikes to neighbouring properties, especially to those unfortunate people who share the same phase of the 440 volt supply.

"The electricity suppliers are also responsible for spikes and voltage fluctuations."

The electricity suppliers are also responsible for spikes and voltage fluctuations. Power line over voltages are caused by the Electricity Areas switching lines to optimise the usage of their generating equipment during off peak and peak demands for power. When under voltages are corrected during brown-outs and black-outs there is usually a high voltage surge as correction to the supply is made.

Another cause of transient spike production is by lightning strikes being transmitted through power lines. Even distant lightning strikes can cause the spikes to travel several miles through power lines. A direct lightning hit, although the least likely to occur, is the most catastrophic and can add thousands of volts to local power lines.

Another form of transient creation is that of power overload, short circuit or the sudden carthing of an electrical circuit.

THE EFFECT OF SPIKES

Warning! Those of you of a sensitive disposition are advised to skip this section, as it is not pleasant reading!

The more complex a piece of equipment, the tighter the tolerances to which it is designed and built. This means the equipment around us is becoming more and more sensitive to the possibility of a sudden voltage fluctuation. There is a "trade off" between the benefits of modern technology and the price to be paid.

The old thermionic valve, for all its faults, was relatively robust and easily replaced when it went wrong: not so the increasingly complex microchip!

Any chip, regardless of design, is vulnerable to a voltage transient, which can cause the development of "hot spots". This can either bring a temporary disruption of the electron flow patterns, or in extreme cases lead to localised melting which permanently destroys the circuitry.

Transistors and similar components are not immune to spikes, as they are subject to thermal runaway leading to

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POWER FAILURE
VOLTAGE DROP
LOW LINE VOLTAGE
HIGH LINE VOLTAGE
VOLTAGE SPIKE
HIGH FREQUENCY NOISE
HIGH LINE FREQUENCY
LOW LINE FREQUENCY

possible burn-out.

Cathode ray tubes found in televisions and computer monitors are also susceptible, as the associated circuitry under the influence of a spike can cause a momentary blackout of the picture of a brief overload of the electron guns. In either case the life of the tube is shortened. Electro-mechanical components suffer from the welding of contacts when "hit" by a spike.

Breakdown of insulation can also be caused by a severe spike causing arcing of components. This can lead to the shortening of component life and subsequent breakdown of equipment meaning expensive repairs. In the case of computer equipment the problem could be even greater with the loss of data stored in memory, read/write errors on floppy or hard disks. Where semiconductors are subjected to a series of small spikes, these can be interpreted as legitimate input signals, again leading to corruption of data.

BACK UPS AND SUPPRESSORS

All the above makes rather grim reading, but the dangers can be minimised by following some relatively simple guide-lines.

Computer users are among those most at risk from spikes. The need for regular backing up of data on to non volatile media cannot be over-emphasised. However in many cases this is not possible, for example where software has been protected from copying in an effort to discourage piracy. Therefore a better all round option is to prevent the transient from ever hitting the equipment in the first place. This can be done by the use of a "Surge Suppressor".

The surge suppressor has the ability to absorb energy and react to spikes in nanoseconds but, equally importantly, can recover to absorb further spikes without loss of performance.

Whilst no surge suppressor can guarantee against every size and shape of spike, many different designs with a wide variety of features and capabilties are available. No suppressor will be able to absorb the energy from a direct lightning strike, but under such an extreme circumstance there are likely to be other things on your mind than the effect on your electrical equipment!

There are two main types of suppressor currently on the market. Both are a type of voltage dependant resistor, one being silicon based, offering a very fast response time but low energy rating and poor recovery; the other being metal oxide based, with slower response, high power handling, and good recovery. For normal use the metal oxide type is preferable, as the power handling and recovery advantages easily outweigh the slightly slower response time.

Suppressors also come in a variety of voltage, current and energy ratings. The higher the energy rating, the higher the cost and physical size. The voltage selection is simple - 240 volts is the normal requirement. A good compromise is a 13 Ampere current rating with a surge current capacity of 4500 Amperes. This gives an energy rating of 225 Joules, and a response time of less than 10 Nanoseconds (one nanosecond is one thousand-millionth of a second). Suppressors of this rating can be fitted into specially adapted plugs or sockets, for ease of use.

NOTE: THESE COMPONENTS DO NOT ACT AS EARTH LEAKAGE "TRIPS", AND DO NOT PROTECT AGAINST ELECTRICAL SHOCK. NEITHER SHOULD THEY BE FITTED TO NORMAL PLUGS OR SOCKETS UNLESS THE FITTER HAS A FULL UNDERSTANDING OF THEIR USE. It is far safer to purchase professionally modified plugs or adaptors than to undertake such modification yourself.

RADIO INTERFERENCE

To further complicate the story, there is the additional problem of Radio Frequency Interference (RFI). Some appliances can broadcast radio waves in the course of their normal operation, a prime example being any device which produces a spark as electrical contact is made or broken. This is in fact the way in which the earliest radio transmitters worked. This radio signal can then be superimposed on the electrical current in a nearby power or data cable which acts as an aerial. The interference will vary in frequency depending upon its cause (between about 100 kilohertz and 10 megahertz). This frequency range is sufficiently close to some of the common frequencies used in data transmission to cause problems. The solution is to fit a filtering coil to reduce the effect to an acceptable level. This coil has to be carefully designed to match the power consumption of the protected device and provide sufficient filtering to be effective without over-reducing the power band-width. This, of course, adds to the cost and size of the unit

RFI and related matters are the subject of several new regulations which are being drawn up by the EEC to come into force in 1992. However some member states are reluctant to fall into line on these issues and therefore the DTI in Britain is planning to announce its own regulations.

While "spikes" are not an everyday occurence, they are common enough to merit consideration by all serious computer users. Remember, the more highly technical and hence usually more sensitive your equipment, the more it can be affected - and spikes are a more compelling reason for making sure you back up your valuable data. Surge suppressors are certainly worth the trouble if you want to be sure of avoiding damage and data loss.

NG

Power Packed

POWER CARTRIDGE
£14.99

Andy Eskelson opens up - literally - an interesting cartridge that gives the 64 added power...

The C64 and the C128, are equipped with a means of adding external hardware, normally in the form of a cartridge. However the cartridge port is also an expansion port, and can be used for many other things besides cartridges, and I wish that the designers of cartridges would remember that fact, and provide a means of disabling the silly things!.

Power Cartridge is a 64/128 cartridge that provides a mixed bunch of functions designed to make programming easier.

Installing the cartridge is easy. Just plug it into the expansion port and switch on, well that is what I did, and it was then that I found the first problem - no video display. I tried resetting. Still no video. I Took a deep breath and switched to 40 column mode. There was a display depicting the power cartridge logo and the dreaded C64 basic... yes the blasted cartridge had done a dirty, and switched into 64 mode!.

The commands are divided into several sections, the toolkit, the printer tool and the reset tool. The toolkit is the most useful of the functions, and you get a good range of utility type commands, they are:

AUTO; AUDIO; COLOR; DEEK; DELETE; DOKE; DUMP; FIND; HARDCAT; HARDCOPY; HEX$; INFO; KEY; PAUSE; PLIST; ILOAD; RENUMBER; REPEAT; SAFE; TRACE; UNNEW; QUIT; MONITOR; BLOAD; PSET; DLOAD; DVERIFY; DIR; DSAVE; MERGE; DEVICE; DISK.

Not a bad selection of commands especially the more unusual commands.

FIND, this is one of the few good find commands, it will only print the line once regardless of how many times the search data appears in that line.

DEEK, DOKE two useful commands, allows 16 bit numbers to be poked and peeked, so you don't have to use that clumsy poke lo poke hi method when setting up addresses.

HARDCAT, HARDCOPY and **PSET** are printer functions, allowing direct listings to a selection of printers including printers connected to the user port.

RENUMBER is a masterpiece, it allows you to shift blocks of program about, and it gives good warning if lines will be overwritten, as well as the normal renumber functions.

AUDIO is a nice touch for tape users, it displays a line of dashes when data is coming in from the tape drive, as well as switching on the monitor speaker.

The trace command is interesting, not because of any clever functions, but rather because it is one of the worst trace commands that I have seen. All that you get is a display of the line numbers!

I also found a bug in the DLOAD command. When I loaded a basic program in, and tried to list it, I found nothing at all. I then tried a LOAD"name",8 and that worked as normal. When I saved a program and reloaded it with DLOAD it worked fine. I suspect that the DLOAD command will not accept C128 programs, because they are loaded at $1300 rather than $800. A rather silly bug.

Another bug with DLOAD is that it did not like DLOAD "name",9 at all, in fact it simply went to device 8 and looked for the file there. This may be a bug, or it may be that it is not an implemented feature. The handbook DOES NOT specify that you can use other device numbers with DLOAD, if this feature has been left out it should be programmed in!. The Power cartridge allows the use of other devices with the normal LOAD "name",dn commands.

The Power Cartridge gives the programmer a much faster disk access speed, claimed to be up to 5 times faster. I found that 2 to 4 times faster was produced depending on the file and where it was on the directory.

Tape users have not been forgotten, as they get 10 times faster loading and saving times

There is one other thing that I find very odd about the Power Cartridge, and that is the DISK commands. this allows the disk to be accessed with the format DISK "I for initialize etc. I have to ask why the more standard BASIC 7 commands not used, such as SCRATCH, RENAME etc

All fast load functions can be disabled either by using the QUIT command or by specifying a high device number 48 in the case of disk device 8, so there should be no clashes with other software.

MONITOR

You get a very nice, but fairly standard

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monitor with the Power Cartridge. The main feature is that it is outside the normal address range of the C64 so you can look at any memory range without any problems. Other than a modified load and save command to allow the use of slow or fast save/loading, there is nothing special about the monitor.

BACKUP

The backup or RESET functions of the Power Cartridge are quite reasonable. Essentially they take a snapshot of the memory and save it to disk. There are several options that will modify the amount of data saved, depending on the program in memory at the time. This function also works for tape users, so it is very useful.

PRINTING

The Power Cartridge has a very comprehensive printer support system, it will allow the printing of screens and listings with several options as to what type of output is produced and where the printer is connected. This is one of the more useful functions of the Power Cartridge, and it is very well programmed. There are options that take into account if the user port is connected to something else, to lock out the user port from the Power Cartridge, which will also prevent any conflicts. The centronics driver makes use of the user port, and cannot be used if you are employing the user port for something else!

You can control quite a few printer functions such as auto CR/LF case conversion and device numbers. There is also a transparent mode so that you can drive the printer directly.

THE HARDWARE

The Power Cartridge is a small size cartridge made of a slightly soft plastic, that should be shatter proof. Opening up the Power Cartridge I was pleasantly surprised at the quality of construction. The P.C.B. is a high quality fiberglass plated through hole unit. Good quality solder resist has been used and the standard of workmanship is very high. The heart of the Power Cartridge in a 6810 CPU. This is similar to a cut down 6510 and it provides the processing power that the Power Cartridge needs.

The ROM is a 16K device this is NOT in a socket, so there is no way to upgrade the unit other than to send it back the the factory. The glue logic is provided by a few standard 74 series logic chips. The Unit is fairly compact and the layout is very neat. Apart from the odd resistor and the reset switch that is just about all there is to it. There is only one thing that I don't like about the construction, and that is the edge connector. It is a standard tinned type, I would have preferred a gold plated connector, but you cant have everything!

HANDBOOK

This is going to be the shortest comment about a handbook that I've made in a long while!

Its a damned good handbook... 'nuff said.

CONCLUSION

The Power Cartridge is a good product, but ONLY FOR C64 USERS. It is very inconvenient for C128 users as it inhibits the C128 mode completely. It also lacks the ease of use of the basic 7 command set.

C64 users on the other hand will find the Power Cartridge very useful indeed. It provides a nice set of commands as well as a good tape and disk turbo system. The backup functions are agreeable to posses, but they may have problems with some programs, especially multi part programs (as stated by the handbook). The Power Cartridge is not as versatile as the Expert, but it is there all the time, you will not lose the functions if you switch off the computer. Highly recommended for C64 users, C128 users can forget it unless they work in C64 mode 99% of the time.

A.E.

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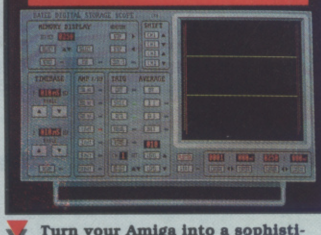

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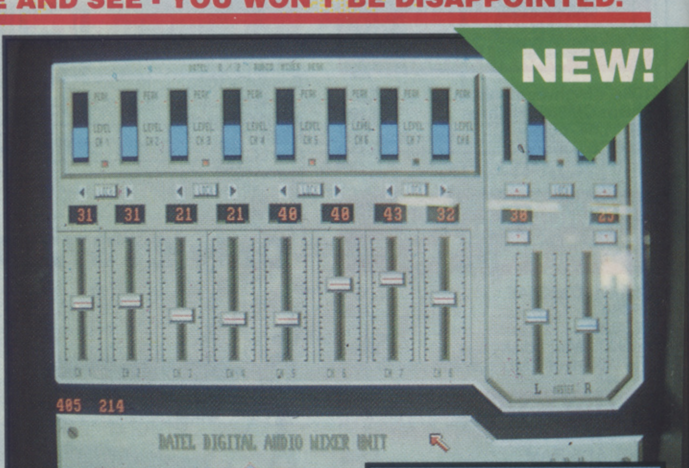

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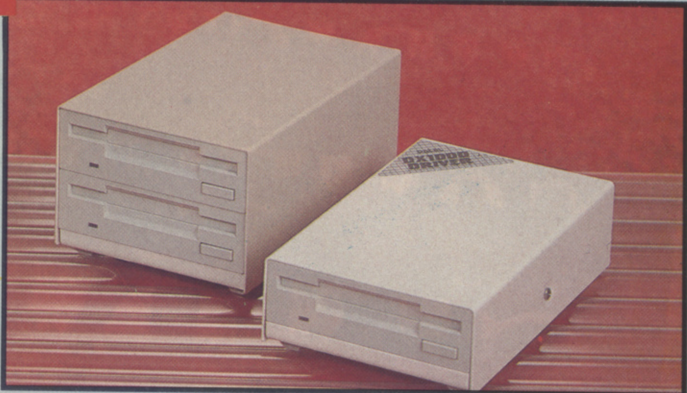

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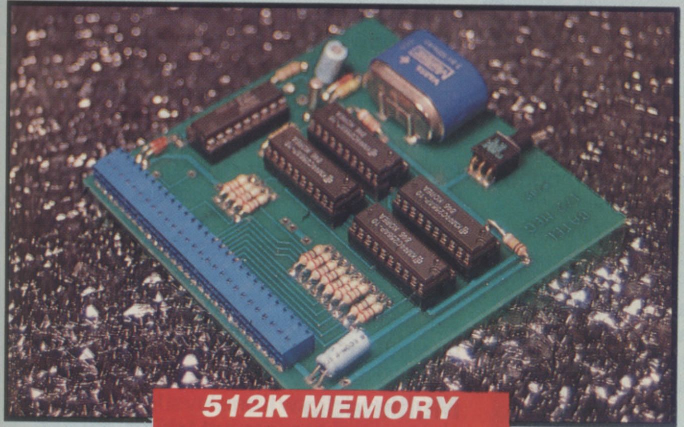

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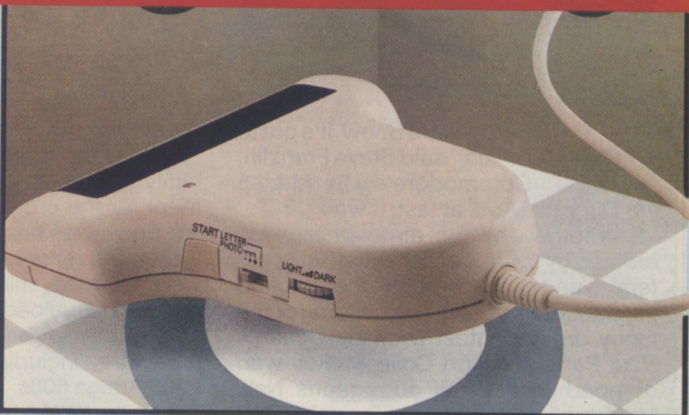

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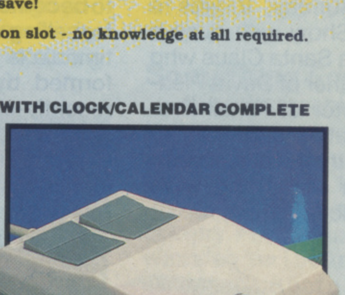

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CBM Show

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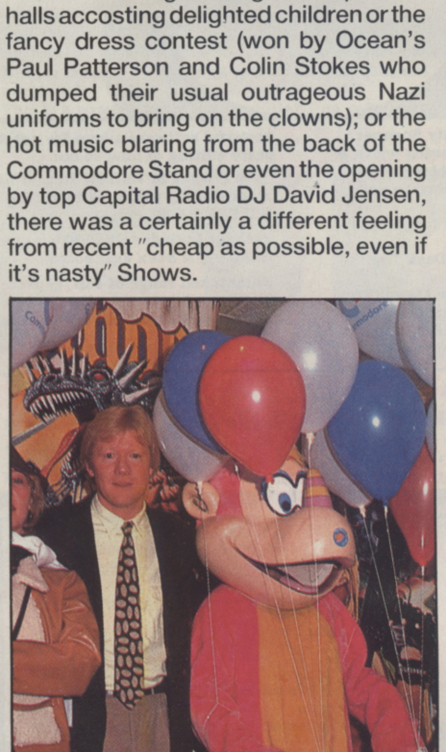
"When we do a Show, it's got to be fun!" said Steve Franklin, Commodore's UK Managing Director. And, at last, it was.

Whether the fun atmosphere was created by the huge Disneyland characters wandering through the packed halls accosting delighted children or the fancy dress contest (won by Ocean's Paul Patterson and Colin Stokes who dumped their usual outrageous Nazi uniforms to bring on the clowns); or the hot music blaring from the back of the Commodore Stand or even the opening by top Capital Radio DJ David Jensen, there was a certainly a different feeling from recent "cheap as possible, even if it's nasty" Shows.



CBM's decision to take over the organising of the last Commodore Show of the decade themselves certainly seemed to have paid off in enjoyment for the crowds. Even the look of the Show was neater and classier than Shows of recent years, though there were, as usual, still many Stands simply devoted to-unloading, piling it high and selling cheap bargain software and hardware, including almost down to £300 Amiga 500s.

While CBM mounted the show largely with its own resources and the help of experienced Showman Peter Bramald, last minute problems with the previous organisers meant that we were asked to create the Official Show Guide - a task that was familiar to us from past years.

For the visitors, long queues forming on Saturday and Sunday, it was a genuine Christmas Show with even a Santa 's Grotto and a Santa Claus who denied he was the father of David Pleasance, CBM's Director of Retail Products, whom distributors and retailers throughout the country believe, we are told, really is Santa Claus and have photographic evidence to prove it.

Not all was in the "What's my present, Dad?" vein and there was through the three days a drive to raise money for the "Help a London Child" charity campaign. And there was a balloon race with the winner getting an Amiga 500.

All these lively events certainly added to the fun of the Show but there was also much more that made the journey through to traffic-jammed west London well worthwhile. CBM had been much more persuasive in convincing long-absent leading software companies to renew their relationship directly with the Commodore faithful. Top names such as Ocean, Electronic Arts, Mirrorsoft, Mindscape, Domark and Microdeal had substantial Stands at which their latest - in some cases previously unreleased - software was on display and sale. They were joined by the ever-loyal Anco and a face missing for some time from the Commodore world, erstwhile CCI columnist, Llamasoft's Jeff Minter.

But it was a Christmas Show, though a month ahead of time, so many of the visitors were there to buy gifts for themselves and others, and bargains abounded. There was even one Stand actually called Bargain Software.

Multimedia

C64 entertainment and even serious software was being offered at knockdown prices. You could pick up full-price games only a few months old down from £14.99 or £9.99 to £2 or £3, or, if you had programming in mind the classic 1st Publishing 64 Assembler for just £1 on the Multimedia Stand.

Multimedia? Not a name known to many yet in the computer field but likely to become well-recognised, though not for selling very cheap assemblers. Multimedia is a new distribution company formed by the leading lights of the recently-closed major Commodore and software distributor, Microdealer. Lee Ginty and Craig Saddington, Microdealer's previous directors, have separated themselves from the Maxwell organisation and set up Multimedia and with their past record may well be challenging the UK's top entertainment software distributors, Centresoft and Leisuresoft, for a high place in the market. They launched their company at the Show just six weeks after putting their deal together.

There were many other more familiar names there too - and some rather unusual ones. Hamley's, the famous toyshop had a presence as did the Pepsi Challenge. And there was even Encylopaedia Brittanica trying to import a little education and culture to the shoot 'em up brigade.

Amiga Section

As usual, the Show was on two floors of the Novotel Hotel. A large part of the upper floor was dedicated to the Amiga. It was a quieter, obviously more serious section. Well, not always quieter... Emerging from a cavernous, strobe-lit annexe to Commodore's own Stand came the magnetic sounds of pop, rock and roll and all that jazz... Two or three intently-skilled musicians seemed to be concentrating on a mass of electronic equipment with world famous musical names like Roland emblazened on it. The music was to top professional level and it was all, as could be seen amidst the masses boxes and cables, controlled by a single Amiga 500 and a CBM 590 hard drive.

Andrew Bishop, CCI's own electronic music buff, was often to be seen loitering nearby with a transfixed expression as if he had reached nirvana at last. (Or could that have been the result of hearing CCI"s Billy Brown take a hand at the drums?). Music is beginning to play a leading role with the Amiga and Yamaha too brough some popular instruments to the Show, including keyboards as cheap as £69.00.

World First...

Bytes and Pieces, the well-known retailer, caused quite a sensation with their claimed "world first" 8 meg board that fits all Amigas and their brand-new, exciting AX-S expansion system.

Marcon had the Rendale Genlock that lets you record animation or graphics on a VCR. And graphics were also to the fore in the product with which Jeff Minter made his reappearance into the CBM field. His Trip-a-Tron light synthesiser gives spectacular iridiscent displays and has its own 120 command programming language. It was launched for the Amiga at the Show.

Bath Computer Shack had on offer a cordless mouse. Softstuff were providing a new range of educational software, as was MST Maverick Software. Frontier Software was previewing its new expandable printer buffer and Memory Expansions had (surprise, surprise!) upgrades in many forms for all Amiga memories.

THRONGING CROWDS AT THE NOVATEL!

Trilogic, always inventive, have come up with a mouse/joystick monitor sharer which lets one monitor or TV be used by two computer, or a computer and a VCR. Silica Shop, which declares itself to be the UK's No1 Amiga specialist retailer had a large and very well-stocked Stand.

Something For Everyone

If you had problems, you could recur to the expert help and advice of ICPUG for all Commodore machines. ICPUG is the largest and, they warmly tell us, "most friendly" computer club in the country. For Amiga only followers, there was also the UK Amiga Users Club and even the C16 got a mention with games from Software Selection and at just £1 from Anco.

There was, it seemed, as we try to achieve with CCI, something for everyone. Commodore themselves, now into their stride with big sales for the C64 ("We've shifted 150, 000 in 6 weeks!", one of the software houses that has a product bundled with CBM's 64 Light Fantastic pack told us wonderingly) and also with the Amiga. Their PCs are taking an ever stronger role in the market too. So Commodore had a right to look pleased with itself and are probably going to be able to fulfill Steve Franklin's promise at the recent PC Show of "taking the UK home market this Christmas!".

With software companies of renown like Ocean, Electronic Arts, Mirrorsoft and Mindscape adding a touch of upmarket style, with the slashed prices of the "traders" in both hardware and software and even peripherals more than paying for the entrance (Pete Connor, Editor of our 16 Bit publication The Directory looked saddened at having paid a mere £2.99 for a mouse. Why, when he told us that they cost £9 at a recent Mac User Show? Because he found another mouse mat later at just £1.99!); with Commodore putting on the show biz glitz with Santa Claus and Disney characters strolling the place, the Show reflected the revived optimism that is present in the Commodore world. For the last few years, the Commodore Show has looked a little bedgraggled and down-at- heel. Times felt hard and the Show mirrored the feeling but now they may be a-changing. There is a far more confident air about Commodore and everyone involved with it and. as we all know, nothing succeeds like... well, an idea, or a computer company, whose time has come.

Z.M.S.

GAMES
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PIRACY.

THIS DISK COULD GIVE YOU 6 MONTHS IN PRISON

Carrie Beecroft and Simon Power investigate an increasingly common crime.

Piracy is theft. It is stultifying and dishonest. Piracy is when unauthorised copies are made for retail sale and/or personal profit. Somebody is stealing something from its rightful owners just as if it were cash from a pocket.

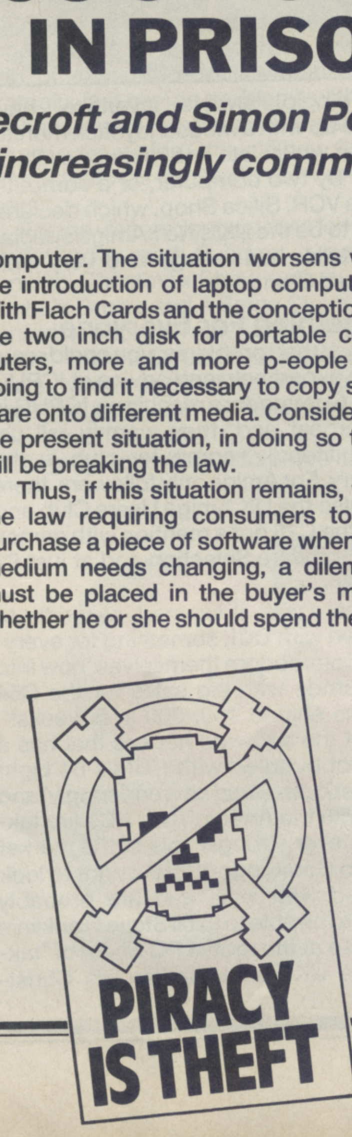
The copying of originals, from audio tapes to Cartier watches, has troubled manufacturers since production began. Pirated copies complete with all the "special" and "original" features of the real thing are marketed with extreme ease and success because they are incredibly cheaper to make. Because the 'pirates' – the forgers, don't have the legitimate costs of the manufacturers of the original. This is the same whether it is done by big time or small time pirates, the professional with unused audio studio time or the schoolboy with a disk copier. The piracy situation becomes more complex in the world of computers. The owner or purchaser of an original piece of software is allowed by law to produce back-up copies for his personal use. However, it is illegal to use a copy of a program purchased for use on one kind of computer on another computer. The situation worsens with the introduction of laptop computers. With Flach Cards and the conception of the two inch disk for portable computers, more and more p-eople are going to find it necessary to copy software onto different media. Considering the present situation, in doing so they will be breaking the law.

Thus, if this situation remains, with the law requiring consumers to repurchase a piece of software when the medium needs changing, a dilemma must be placed in the buyer's mind, whether he or she should spend the full amount on an original copy, or to opt for the cheap pirated alternatives. In this age of the evolving computer, where new disk sizes and indeed new media are appearing at a frighteningly fast rate, the definition of piracy needs sorting out and a standardization made.

The problem lies mainly in the mystery surrounding the policy on software piracy, and the lack of legal control. MP Emma Nicholson is currently attempting to implement "The Hacker's Bill". "This should shed some light on the subject", Ms Nicholson informed us.

"We stand no more hope in winning the war against piracy unless the legal situation is clarified and the loose ends neatened." Even people intimately involved in the computer industry show a startling ignorance of copyright ruling."

FACT: Bob Hay of F.A.S.T. (Federation Against Software Theft) informed us that the most urgent problem lies not with the law per se, but rather with the owners of copyrights. These owners have the final say as to what can or cannot be done with their product. As Bob Hay said: "If he so desires, the



copyright owner can insist that any person requiring to copy the article for either his own personal use or for the purpose of retail, must stand on his head waving his right leg while doing so. If this requirement is implemented correctly, the "pirate" copy is legal under the present copyright rules." This foolishly broad and loose legal arrangement only highlights the futility of the situation.

FACT: A number of companies have approached the problem from a different angle, that of implementing a "licence to use software" rather than allowing outright purchase of the program. The purchaser never 'owns' the software, though he does 'own' the disk or cassette. He is only licenced to use it – the title (ownership) of the software is retained by the company. All very well, but we can hardly envisage hordes of "Software Licence Inspectors", blue lights flashing and sirens wailing, kicking down doors to see if you have got a legal copy of their program or not!!!

FACT: If you own a game/animation package etc. on a 3½ inch disk, and produce a copy of this disk on a 2 inch flash card for use on your laptop, you are a thief, and have committed a criminal offence.

FACT: Connectivity between computers is ever increasing. Information delivery via wires as opposed to via disk is becoming more common. Is there a solution? No-one has been able to give us a watertight legal opinion.

Until there is a clearer legal situation, piracy will continue at its present high rate. Emma Nicholson may be successful in implementing a bill which will define the situation.

'Designer' Software

One way of combating piracy may be to improve the status surounding the original product. Just as it is desirable to own an original Sheraton chair, which displays, at least to experts, is craftsmanship as no reproduction can, why should it not be every consumer's dream to own original disks and NOT pirated coipes? We could be encouraged to buy originals by improved marketing and packaging techniques. Owners of pirate copies should not be admired for being in possession of stolen goods, any more than the owner of a pair of cheap jeans is thought by those interested in clothes to be as stylish as the wearer of genuine 501s.

John Lettice, Editor of MicroScope, confronted the problem of different media when developing software for a new medium. The Xenith MiniSport handheld computer operates on a 2 inch disk; when testing the machine during its development, it was essential to copy programs from other media as there was no software available of the required disk size. Technically, in doing this Lettice committed an act of piracy. He suggests that software houses should change their attitude to licences so that they cater for the ever increasing number of owners of two or even three PCs. The licence should be made per user rather than per program.

PIRACY IS THEFT

Games piracy, because games software is a mass market product, is probably more wide spread than that of any software. While software houses seek ever more secure protection systems,

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PIRACY ...

hackers often just regard them as challenges.

Some software houses are now refusing even to release games to magazines for fear of piracy. One games magazine was accused last year in being involved in allowing early copies to be made, which ended up being sold cheaply off market stalls.

Domark only permit games reviewers to go to their offices to examine their game before release and do not permit their removal. Dominic Wheatley, Domark's joint MD, says "getting a copy of a game *before* it's released is what really turns them on. We don't take any chances now."

It is estimated that for every audio cassette sold, two are copied. There exist no similar estimates for the software business. Copying is easy and profitable. Few professional copiers are caught though it is not unusual to find dealers casually making a copy of a piece of software to substitute for a defective return. And at public schools, one boarder will buy and supply the boys in substantial quantities.

Thus the confusion continues. Until a clear licence agreement is standardised, that deals sensibly and fairly for those people with more than one machine, an adequate solution cannot be reached. Unless the concept of intellectual property is clarified and everyone, schoolchildren included, is successfully made aware of the damage copying does and the seriousness of the crime, piracy will not be eliminated. Unless, of course, we all return to hardware, like Nintendo and its cartridges...

C.B. and S.P.

> "It's against the law to pirate software. You can be fined £2,000 or go to prison for six months."

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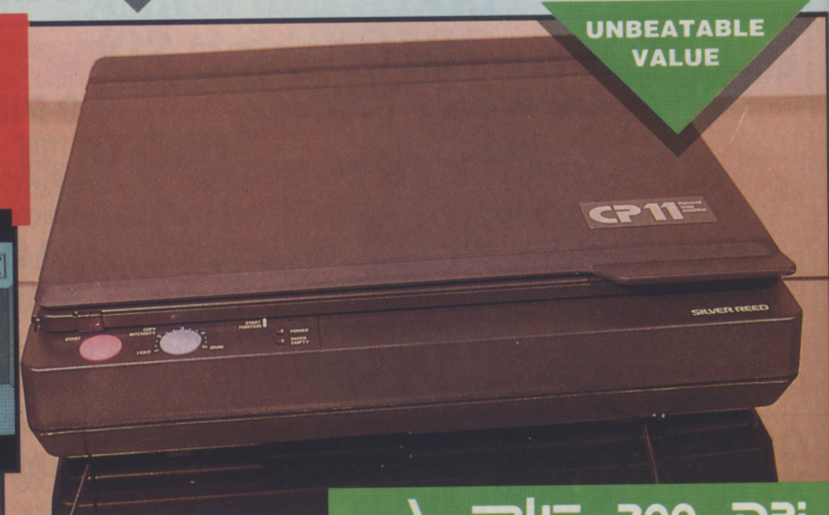

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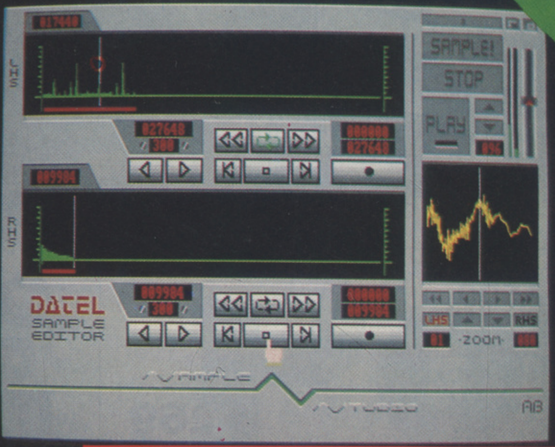
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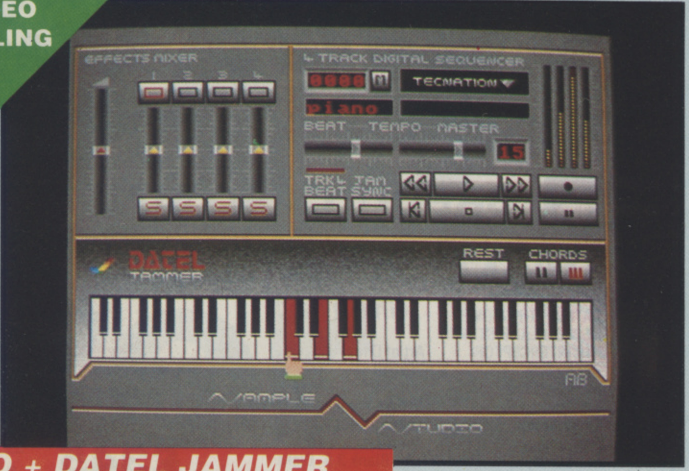
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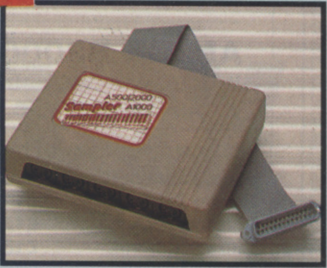
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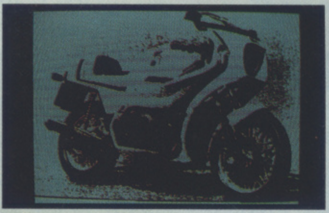

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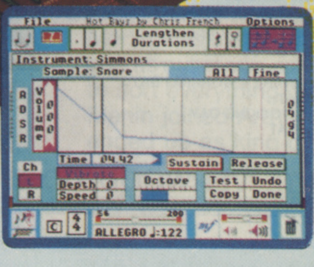
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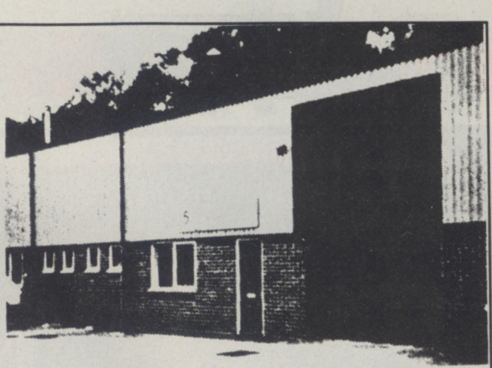

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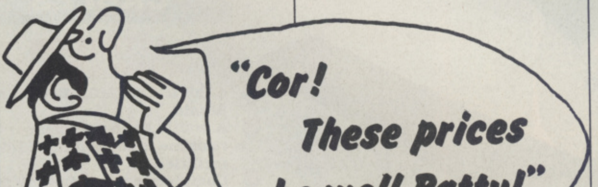
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More 64 Power Making Money

Andy Moss in his Adventure column raves over a new game. Peter Gerrard lets CCI readers in on its creation and points to the profitable moral of the story

So you want to make money out of your Commodore 64, do you? Here's one way. Many of you must sit at home in front of the 64 playing adventure games into the early hours of the morning, lost in a wondrous world of fantasy that is usually far removed from the confines of everyday life as we know it. But have you ever wondered how the game that you are playing came into being? What is the story behind the game's origination, development, and eventual release? By taking just one example we can show how you too might just manage to recoup a little of the money that you originally spent on your 64 and peripherals.

A few adventure games of mine have been published in the past. Nothing of any great earth-shattering importance, but at least I know how to put a game together (I hope!). Strong story line, a host of characters, and a collection of intriguing puzzles that would hopefully have various heads being scratched as people tried to complete the game, are just some of the main ingredients. However, with the developments in computer technology that are going on it seemed to me that the individual was going to be hard pushed to write an interesting and hopefully innovative adventure that would make extensive use of the features of the computer. Such things were the realm of companies and corporations now, people like Magnetic Scrolls, Level 9, Infocom, and other masters of the genre.

That same thought, that at least two heads were better than one when it came to writing a good adventure, had also occurred to a friend of mine. Sandra Sharkey for a long time was editor of the popular fanzine Adventure Probe. Another person who should, therefore, be capable of knowing what constitutes a worthwhile game. So we got together in the hope of, if not writing an adventure, at least coming up with the storyline for one.

Our first attempt ended in failure. For a while I had been writing short stories for the aforementioned Adventure Probe, those stories concerning themselves with an inept wizard, a fearsome dwarf, and a talking rabbit who could also read minds. You have met them in CCI! From these stories grew the plot of a game that saw them travelling back in time (although in the game they go forward first of all, owing to the wizard getting confused over a few of the runes on the time travel spell scroll) to the land of Camelot. There King Arthur was as yet but a young lad, Merlin was in the grip of an evil power, and as our merry band of three you had to sort everything out and ensure that Merlin joined Arthur's side and Arthur ended up as king of all England. As a sub-plot, there is the local megolamaniac baron who wants to take charge of everything and who generally hinders and obstructs you.

There was a little bit more to it than that, but we did have one idea that, we thought, would make the adventure stand out from the crowd. It would also make it very difficult to solve. You could play any one of the three characters of wizard, dwarf or rabbit. You could swap from one to the other whilst playing the game, and various problems would depend on you being the right character at the right time. The wizard, being tall, could see what was on top of a high shelf, for instance, whereas the dwarf or the rabbit could not. He can also cast spells (with varying degrees of success), which is something that the other two cannot do. On the other hand the dwarf, being strong, would be able to move objects that wizard and rabbit could merely lean against. As a final example, the rabbit's ability to read minds would help him in situations that would leave the wizard and the dwarf floundering. Intricate problems can be devised within such a framework.

That is not to say that you could not have more traditional adventure-type problems as well, ones that could be solved by any of the party, but we thought it would make an interesting change to be able to play a game from three totally different points of view.

When we had got the storyline

continued on page 38

continued from page 37

worked out we moved onto the map and its associated location descriptions, together with the various problems and their solutions. All this was meticulously typed up, along with a list of objects (and their starting locations and uses) and anything else that we could think of, like character profiles for the main protagonists, and the end result was a large collection of material that, we thought, would make life much easier for the eventual programmers. We had long since decided that this game was beyond both our skills in the programming department, and a company would have to be convinced into taking it on.

We tried Level 9 first, and about a week later heard that for some time they had been planning on doing a game called Lancelot, which of course is all about Arthur and Camelot! Curses, and the eventual rejection of the game came as no great surprise. Sad, but not surprising, and even though we did get a very nice letter it was still a rejection. They did say that they would be interested in anything else that we might come up with, a point we were to bear in mind.

Nothing daunted, we sent it off to Magnetic Scrolls, who also turned it down in due course. Another nice letter back, but many month's work was clearly destined not to produce any results.

During the course of working on getting this game up to a presentable degree, other ideas had occurred. One such was just that, an idea, and I spent about fifteen minutes doing a rough outline of it. That outline went like this:

You are Sebastian Mellford, frightfully, frightfully rich, an expert on the stock market and the most upwardly mobile of all Yuppies. You even clean your teeth using a vintage Chablis. You own a Lamborghini, complete with its own telephone, modem, link to the markets around the world, lap-top computer, cocktail cabinet, pocket television, compact disc player, everything. You have a suitable des-res in commuter country, situated next to the cemetery, which gives it just the right amount of down-market kudos to make it eminently desirable and vastly over-priced. You cruise into work every weekday at around ten, makes one or two perfectly correct estimates of the market, sell and buy a few shares and increase your personal fortune into the bargain, take a long and expensive lunch in a little place that you know, put your feet up for the afternoon, then drive home. Your evenings are spent in suitable nightclubs, your weekends in the play palaces of millionaires, you are seen in all the right places, and you look set for a superbly contented life.

What a shame it is, then, when your body is dragged from the wreckage of your car one Sunday evening ...

You are very, very, dead.

You are Seb the ghost, a beginner at the art, a most humbled spirit, not very experienced in shrieking and frightened by your own wails. Clanking is beyond you, you are scared of the cemetery, and you like to keep out of the way of other, more experienced, ghosts. If only you could be reincarnated ...

Let play begin!

And then we outlined a few basic rules about being a ghost. Fortunately this is not from personal experience, I do admit to a little bit of guesswork here.

There are ten levels of consciousness, ranging from the zero level of the beginner ghost that you are now, up to the ninth level. This is humanity, your ultimate goal. In between are all kinds of creations, and it is up to you to discover what they are. As you learn how to reincarnate yourself further up the scale you can reappear on earth at various levels of consciousness: again, it is up to you to discover the meaning of those levels.

As your experience grows, so do your powers as a ghost. You might succeed in becoming the most terrifying of spectres, but then again you might remain as the sort of thing that would be hard pushed to frighten a hamster.

When you have attained the first level, you will be able to switch from that back down to the zero level, and up again to the first. On reaching the second level, you will be able to use any of levels zero, one, or two, depending on the situation. So it will proceed. If you ever reach the giddy heights of the eight level, just one step from humanity, you will be capable of adjusting yourself to any of the previous levels. It's all a matter of learning, really.

Just keep one thing in mind at all times. The cemetery is full of beings that have been dead for a much longer period of time than you, so try not to over-reach yourself. Not even a ghost has nine lives...

Many months pouring over wizards, dwarfs and talking rabbits was, over many weeks, rejected. A few minutes messing about with a ghost was accepted in a few days! Level 9, our old friends who had told us to keep in touch, decided that they liked the idea and could we carry on working with it? Of course we could, and set to straight away.

However, we hit the not inconsiderable snag of Sandra having to go into hospital. I did not feel like producing the entire thing myself, and there matters might have rested had not Pete Austin of Level 9 decided that he would take the concept and produce the rest of the game from there. His letter of acceptance said "I found myself in the awkward position of wanting to produce a game with a ghost as a hero, but with the redesign of "..Bump.." (our working title was Things That Go Bump In The Night) indefinitely postponed and the danger of being misunderstood if I designed a game myself on a similar subject. I'm glad we could agree on a price for me to use the subject". The letter said several other things as well, one of which was a proposed name change to "Spook".

A little later the game saw another name change when it settled on its eventual release name of Scapeghost. The game, as produced by Level 9, is quite different from our original idea, but still follows the two basic points of our concept: 1) you are a ghost who is a bit concerned about his manner of dying, and 2) you can only gradually progress up to being a competent spirit.

Level 9 now have you investigating a drug smuggling ring that you were looking into when you met your untimely demise, and a superb job they have made of it. The hero's name has become Alan Chance (*ghost of a chance, ho ho ho*), and they've added many humorous touches and indeed characters. My favourite character is the ghost of an old landlord known as Joe Danby, who has the initial job of introducing you to the rest of the residents of the graveyard, a job he carries out with consumate ease and splendid wit. Graveyard humour, as Joe refers to it, and very funny it is too. We wanted to introduce a punk ghost, and although they have not included it, one of the ghosts is fairly close to it. A nasty, aggressive sort of ghost who definitely doesn't like you. He takes a lot of convincing before he will lend you a ghostly hand.

We have both seen a pre-production version of the game, mainly so that we could help to eliminate any small buglets that might remain, and thoroughly enjoyed playing it. To be fair to the game, I don't think we would have solved it without the generous help of Level 9 themselves.

So if you are happily playing away at an adventure game, and suddenly get an idea for one of your own, don't just dismiss it because you have not got the necessary programming techniques. Jot it down, check that it has not been done before by anyone else, and who knows? You might slave over the idea for months and see it rejected, as we did, or more in hope than anything else you might dash off a few quick words and see the concept taken up, as we also did.

Now, if anyone wants an adventure about a wizard, a dwarf, and a rabbit...!

P.G.

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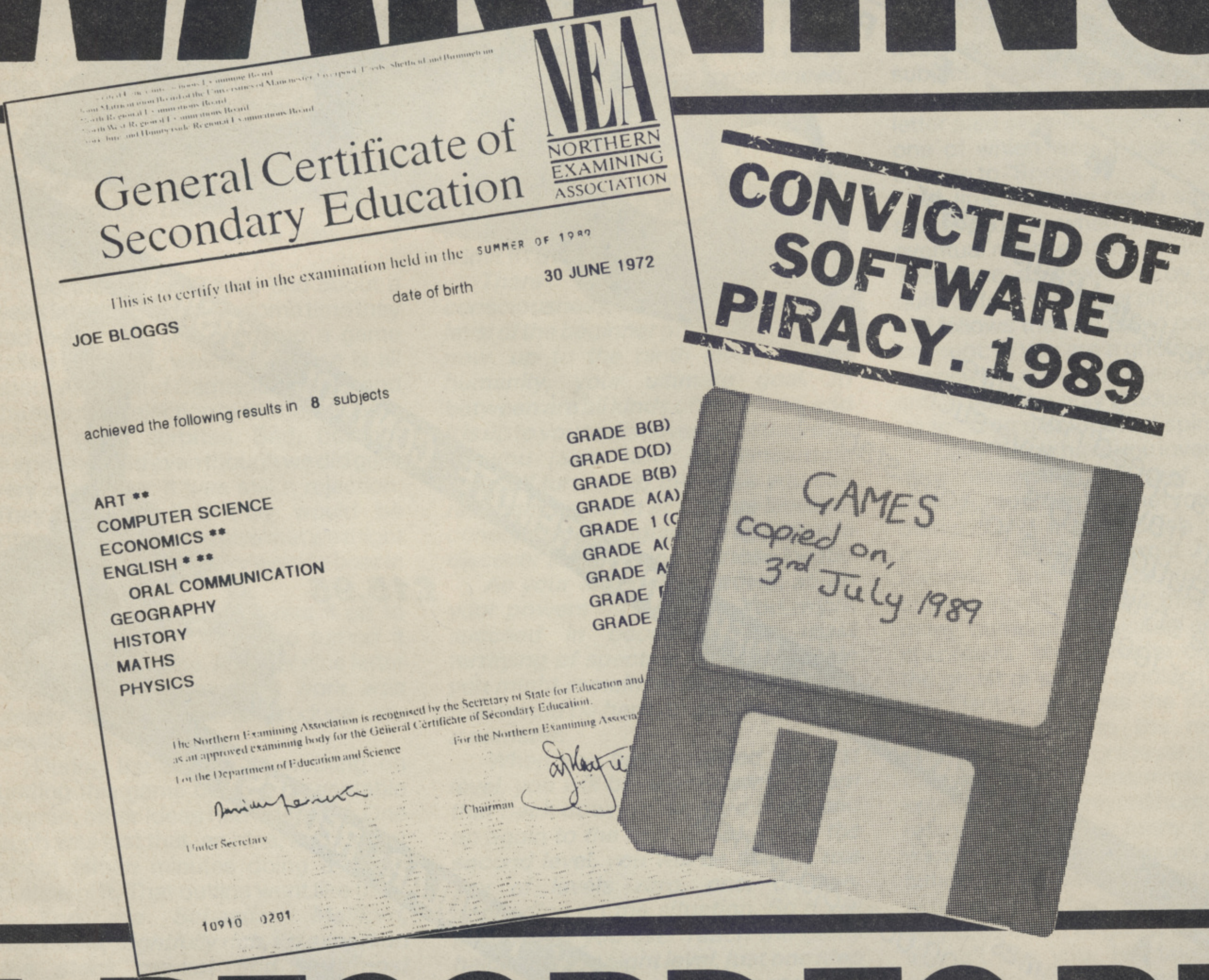
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Battle Chess

Electronic Arts

Interplay

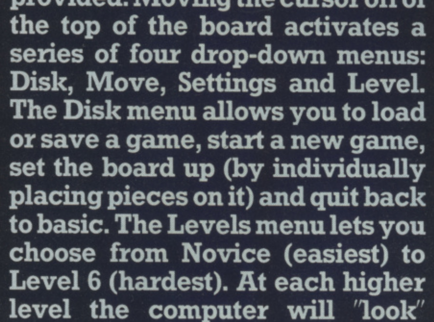
When I was given the ware that this review about, my first thought was "I've already done that!". The software in question being "Battlechess", the now famous, fully animated, 3D chess game from Interplay (through Electronic Arts). On looking again though, I noticed that this version was not for the Amiga but for the C64.

Those of you who have seen Battlechess on the Amiga will understand my immediate feelings of scepticism. How could a program that uses all 512K of an A500 be crammed into a meagre 64K of memory? The simple answer is that it can't but, by using the abilities of the C64 to the fullest, Interplay have come up will a very laudable conversion.

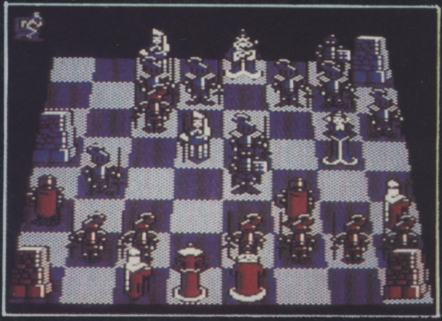
As with it's big brother, protection is provided by the need to enter a move from one of twenty notated games, listed in the Manual. There is no other disk protection, in fact the initial screen allows you to enter a Copier Utility that will make a backup copy for you. A nice touch here is that when you play from the copy, the program skips this part and takes you straight into the game. Having entered the correct move (you get three tries), you are prompted to turn the disk over and the loading be completed.

The screen is initially presented in 3D, with very passable representations of the pieces seen in the Amiga version. The King is still an old man with his glamorous (younger) Queen, the Rooks are ramparted castles and the Pawns, men-at-arms. Piece movement is available from either the keyboard or joystick, with a number of "keyboard shortcuts" also provided. Moving the cursor off of the top of the board activates a series of four drop-down menus: Disk, Move, Settings and Level. The Disk menu allows you to load or save a game, start a new game, set the board up (by individually placing pieces on it) and quit back to basic. The Levels menu lets you choose from Novice (easiest) to Level 6 (hardest). At each higher level the computer will "look" further ahead into the game, thus playing a better game of chess. The other menus are the two that will probably be used most often.

"Move" contains the following options: Force, Take Back, Replay and Suggest. At higher levels, Battlechess will spend longer "thinking" about it's next move. "Force" will interrupt the process and make the program take the best move that it has thought of so far.



"Take Back" will allow you to to cancel your last move (handy if you make a mistake), and "Replay" will restore it (should you decide it wasn't such a bad move after all!). If you are stuck and unsure how to make your next move, then "Suggest" will do just that, give you a hint on what to do. "Settings" not only contains the "usual" 2D/3D, Sound On/Off and who-plays-what options but also two that are not so usual.



Within the obvious limitations of the machine, Interplay have done quite a remarkable job and achieved the seemingly impossible; 2 megabytes of animation have been packed onto two sides of a five and a quarter inch disk!! The pieces are clearly recognisable and the animations are as clever (and sometimes amusing), as those found on other versions.

If you've been thinking about a Chess game for your 64, or are stuck on what to buy a 64 owner for Christmas, I recommend that you take a good look at Battlechess, it could be just what you are looking for.

N.S.

Ratings:
Graphics: 85%
Sound: 70%
Playability: 80%
Overall: 75%

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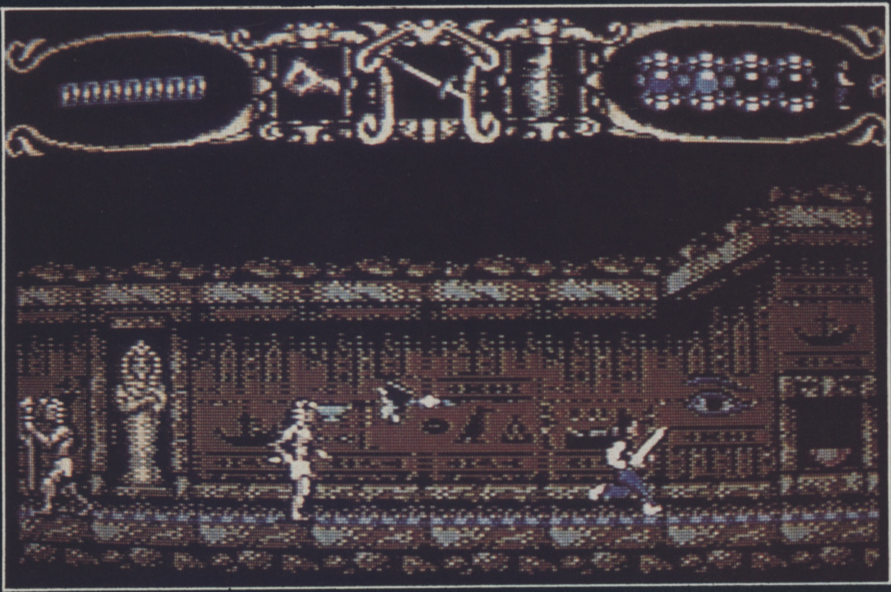
MYTH PREVIEW

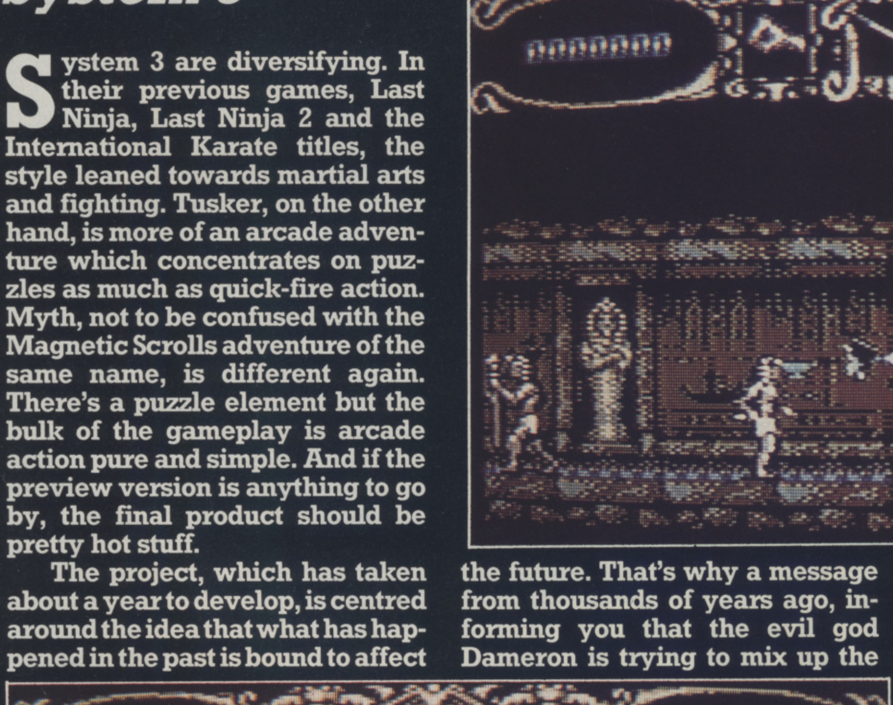
Kati Hamza gets a sneak preview of a game she predicts may race up the charts

System 3

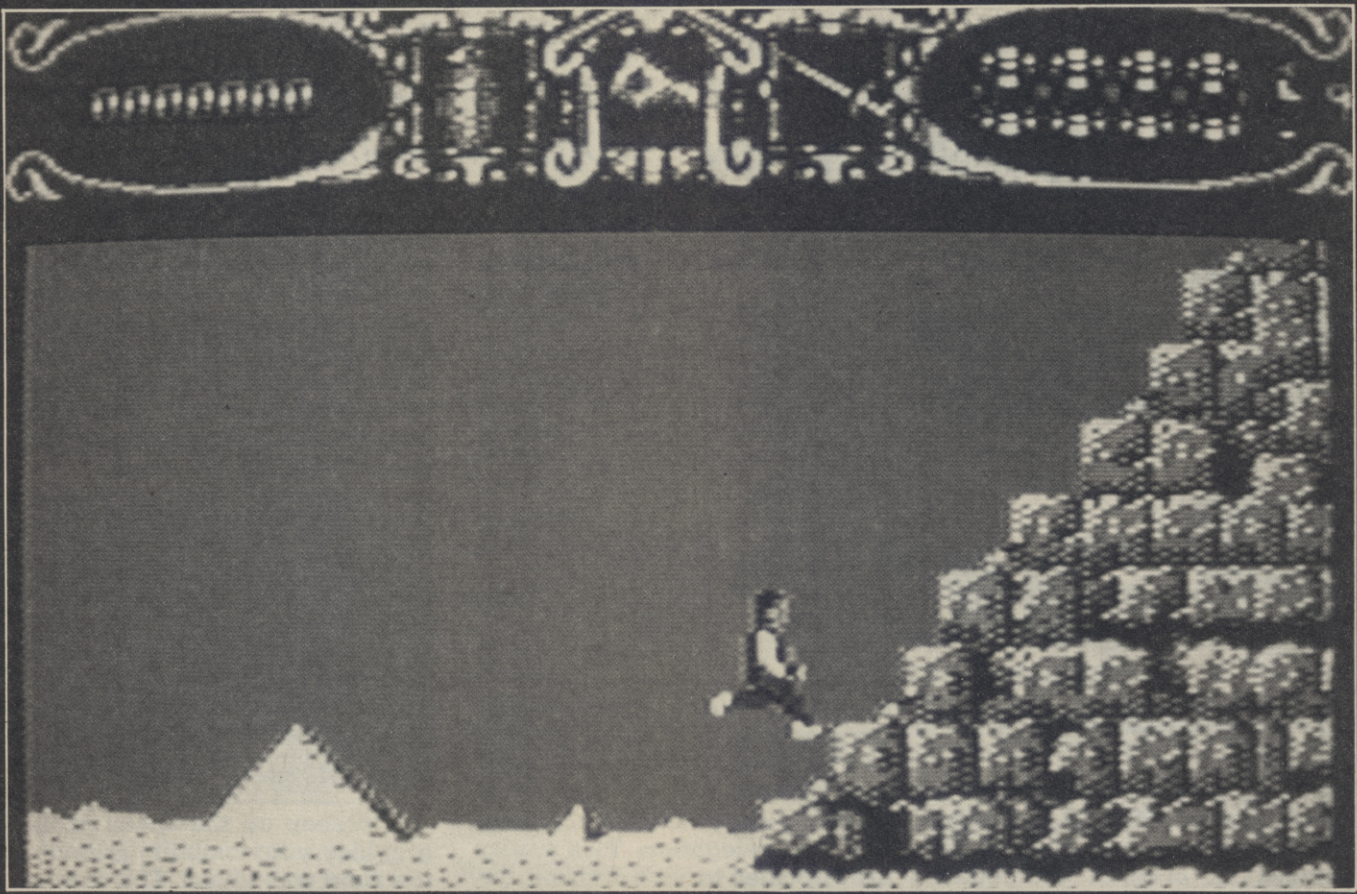
System 3 are diversifying. In their previous games, Last Ninja, Last Ninja 2 and the International Karate titles, the style leaned towards martial arts and fighting. Tusker, on the other hand, is more of an arcade adventure which concentrates on puzzles as much as quick-fire action. Myth, not to be confused with the Magnetic Scrolls adventure of the same name, is different again. There's a puzzle element but the bulk of the gameplay is arcade action pure and simple. And if the preview version is anything to go by, the final product should be pretty hot stuff.



The project, which has taken about a year to develop, is centred around the idea that what has happened in the past is bound to affect the future. That's why a message from thousands of years ago, informing you that the evil god Dameron is trying to mix up the characters of ancient myth and legend is more than just minor cause for concern. If Dameron mixes up the past, the present will change irrevocably and nobody knows what the terrible consequences of that might be.



The quest to sort myth and legend out is divided into four separate loads, each of which contains three different sub-sections. Each of the first three loads is based on a different set of myths; Greek, Norse and Egyptian. The fourth part is the meditation section and has you floating rather than walking through some sort of a loophole in the space/time continuum. Getting through each part is basically a matter of fighting your way through Dameron's many henchmen and making it past several extremely large



monsters or gods that block your way.

Initially you're equipped with nothing more than the strength of your limbs and the power of your brain. However, some monsters do leave behind a selection of different weapons (anything from knives to fireballs) when they're hit. Occasionally, they also drop an energy module - handy for boosting up your dwindling strength. Whether you're carrying a sword of just fighting with your bare hands, the number of available fighting moves is very impressive. It's a selection of lunges, slashing actions, punches and kicks which you'd normally be more likely to find in a beat 'em up rather than in an arcade adventure.

The legends aren't just incidental either. When it comes to dealing with Medusa and the Hydra, it helps if you know a little bit about Greek mythology or, failing that, a working knowledge of a couple of films like Jason and the Argonauts will do. Coping with a huge statue of Achilles or a beckoning nymph isn't just a matter of hack and slay. You have to work out Achilles' weak point, and watch out for the reactions of the nymph. A bit of brainwork is just as important as a lot of fighting brawn.

What singles Myth out from so many other arcade adventures is that all of these sections really are different from each other. In the first load, for example, you have to negotiate two 8-way scrolling sections of rocky platforms and ledges and a more standard horizontally scrolling Acropolis level. In the second part, you're immediately transported on to a Viking ship on which the objective is surviving against a time limit rather than exploration, before you enter a horizontally scrolling and an 8-way scrolling section again. The Egyptian part of the story, arguably the most tricky, has you exploring the inside of a pyramid, constantly watching out for devious traps and attempting to solve several complex puzzles. The meditation episode, with its eerie colours and atmosphere look like it's going to be the weirdest of the four.

Myth isn't finished yet, but the graphics already knock you back. The animation of the central character is incredibly smooth and life-like; all his jumping, fighting and walking moves have to be seen to be believed. Some of the monsters look like Ray Harryhausen effects from a Hollywood movie; the stiff, awkward movement of the skeletons, for example, or the fire-drakes which gambol up to you like cute little lambs only to blow explosives in your face. The background designs are among the most inventive you're ever likely to see on the 64. On the Viking ship, you're in the middle of a storm complete with thunder and flashing lightning that makes it authentically difficult to see.

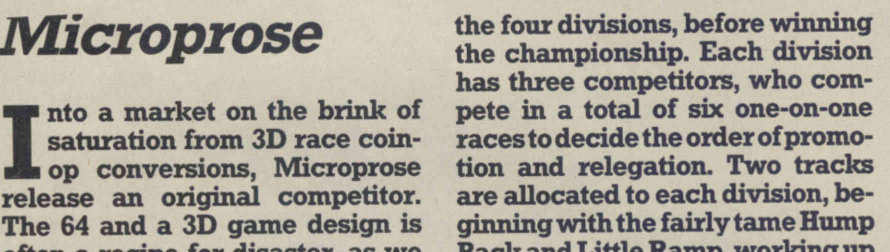
The only sound so far is a selection of realistic, sampled clanking, jumping and fighting effects. The final version should also have several in-game tunes which are bound to add something extra to the mythological feel.

If the preview version is anything to go by, Myth should race up the charts. It already looks like one of the most challenging arcade adventures ever to be released for the 64, so with any luck the complete game, scheduled for release around Christmas time, should be even better. Watch out for a full review in CCI. *K.H.*

Stunt Car Racer

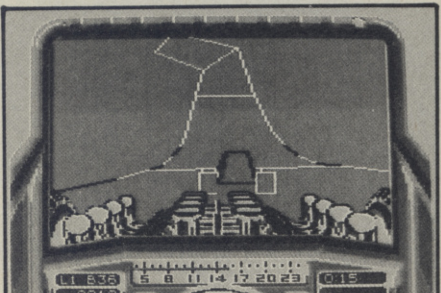
Microprose

Into a market on the brink of saturation from 3D race coin-op conversions, Microprose release an original competitor. The 64 and a 3D game design is often a recipe for disaster, as we have seen all too often with games such as Afterburner and WEC Le Mans. Stunt Car Racer takes a new, more adventurous approach, using surprisingly fast filled vector graphics.



The game is like a hybrid of Hard Drivin and Power Drift, with a few ideas of its own. The object is to take your stunt car up through the four divisions, before winning the championship. Each division has three competitors, who compete in a total of six one-on-one races to decide the order of promotion and relegation. Two tracks are allocated to each division, beginning with the fairly tame Hump Back and Little Ramp, working up to the suicidal Roller Coaster and Ski Jump.

Unlike normal race tracks, these are all built up from the ground, so you need the assistance of a crane to position the car on the start line. The race begins as soon as the crane drops the car. To avoid being overtaken by the computer-controlled opponent, it's essential to make use of the turbo. Once you're in front, an occasional boost will maintain your position, as long as you don't come a cropper on one of the jumps, or overshoot a bend. Although the computer car is just a wedge with four square wheels, it speeds around the tracks and over the jumps extremely realistically. In fact, hanging just behind your opponent is a reliable way of taking each obstacle at the correct speed. One sneaky tactic is to do just that, and then power past your opponent at the last minute.



To keep up the speed of the graphics, your visibility is limited to a short way ahead. This is more than adequate to give time to react to the oncoming track, but it means your view is a little more restricted than it would otherwise be. As part compensation, before you race, a 3D display of the entire track can be scrutinised (plans of which are also included in the manual), so you're not just driving blind during the game.

Controls are responsive enough, and the difficulty level is about right. The graphics are an admirable technical achievment, although some exterior views or wing-mirrors would have done away with the slight feeling of detachment from the action. All things considered, Stunt Car Racer is a very enjoyable game, which has made about the best use possible of the 64's limited 3D vector capabilities.

T.H.

Graphics: 79%
Sound: 20%
Playability: 80%
Overall: 80%
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HORGAN'S HINTS

I was feeling in a cartographic mood this month, and had hoped to include another map this issue, but there's not much around at the moment that warrants mapping. Unlike other mags, who fill space with old material (last month a certain mag had just got around to publishing a map of the previous Batman game), we won't waste everyone's time and money with useless material. I'm sorry to disappoint anyone hoping to find a map of Turbo Outrun in this issue, and I also appologise for not reprinting any game instructions under the pretence of "playing tips".

Before we get stuck in, I have to say hello to David Dewar, and I must thank Wesley Hodges for his excellent map of Batman's first level which, had I not just finished my own when I received it, would have come in very handy. If you're still having a spot of bother with The Joker, I can recommend the chef's special, which you'll find at the top of this month's menu.

Batman The Movie

Tape version...

Load the game normally and complete the first level. Now set the counter to zero, and load the second level. Lose all your lives, and wind the tape back to zero before pressing play. You'll restart from level two, only this time with infinite lives.

For disk users...

There's no SYS call here, so you'll need to enter them with something along the lines of the Action Replay or Power Cartridge. Freeze the game once it's loaded, and enter these pokes to replace the offending "DEC $0404" command with three "NOP"s.

```
POKE 4866,234
POKE 4867,234
POKE 4868,234
```

Pacmania

First, here's an infinite lives poke from Goody, for anyone with a reset facility, to be entered after resetting the game.

```
POKE 28520,165
SYS 14336
```

For the same results, enter this listing from Daniel Dear before loading the cassette version.

```
1 REM PACMANIA CHEAT
2 FOR X=320 TO 357:READ Y:C=C+Y:POKE X,Y:NEXT
3 IF C=3695 THEN POKE 157,128:SYS 320
4 PRINT "DATA ERROR":END
5 DATA 32,86,245,169,81,149,202,2,169,1,149,203,2
6 DATA 96,72,77,80,169,94,141,134,5,196,1,141,135
7 DATA 5,76,0,4,169,165,141,104,111,76,0,56
```

Golden Talisman

Another cheat from Mr Dear: load the game, reset and enter the pokes below.

```
POKE 13458,173
POKE 13518,173
SYS 8192
```

Kane

Infinite lives courtesy of Goody. Load and reset before entering:

```
POKE 8492,173
POKE 9090,173
POKE 9190,173
POKE 35832,173
SYS 3072
```

Kane II

Goody to the rescue once again in the sequel.

```
POKE 10493,173
POKE 10648,173
POKE 11694,173
POKE 36661,173
SYS 3072
```

C16

Sorry for the mistakes that crept into the adventure decoder routine last issue. They were only minor syntax errors, so most of you eggheads probably worked out what was wrong yourselves. If not, make these alterations and all will be well.

Line 30 - Delete the first IF statement.

Line 80 - Insert a colon (:) between LOOP UNTIL A$="R" and COLOR 4,1.

Arthur Noid

Bored with the same old screens? Try this screen designer from Steven Bell.

1. Load the game and enter the monitor
2. Between the locations M 1800 and M 1FE8, change any two digit number/letter (except C0 and D5) to:

57 (brown indestructible bricks)
56 (grey indestructible bricks)
55 (normal coloured bricks)
54 (space)

3. Type G 2000
4. To save your designer screens, type:

S "filename",8,1800,1FE8 (disk)
S "filename",1,1800,1FE8 (tape)

5. To load the designs back in again, first load the game, then your designs with:

L "filename",8 (disk)
L "filename" (tape)

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Robocop

Pause the game and type BEST KEPT SECRET to enter the cheat mode.

Thanks go to Ady Knight for that and the following cheat.

Arkanoid II

To access the cheat mode, type ROBOCOPPER on the title screen.

Something for everyone in that lot, I'm sure you'll agree (although I'm bound to get a complaint about the lack of PET pokes). Anything you've got to offer, get it to me at the address below.

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Power Drift

Activision

You can hear the roar of the engine as you turn to see the lights change from red through to green. But wait a minute, this is no Ferrari and where's that buxom blonde got to? Well, you'll just have to wait until you complete the game before you get anywhere near a blonde.

Power Drift is the name of the game, and comes to you courtesy of Sega and Activision. Unlike some of Sega's former coin-ops, Power Drift is designed for the more mean and ill-mannered player. For example, each time you gain a position, a rather less than polite gesture is made by your driver as you zoom past at a terrifying pace.

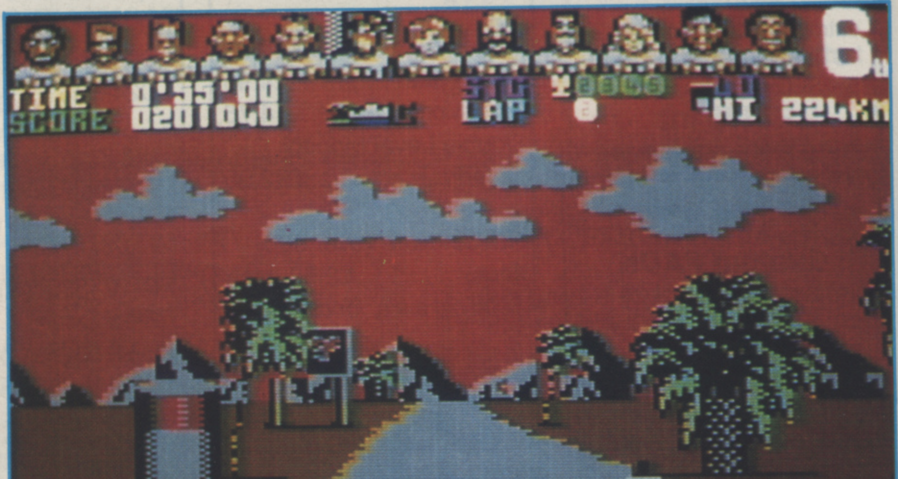
> *"The tracks are much shorter than in most race games, but there is no time limit to keep up with."*

You can choose who you want to be represented by, from a line up of twelve odd-looking characters, male and female. In addition to this are five different courses, each having five tracks to be completed. The tracks are much shorter than in most race games, but there is no time limit to keep up with. Instead, you have to finish in at least third position to qualify for the next race. The five courses all have their own scene, for example on track "E" the graphics are generally made up of iron girders and flyovers, and on track "A" you have to survive the rocky terrain and advertising boards.

> *"The only problem with it being so fast is that you need lightning reactions, especially in the later tracks."*

Ramps, bridges, gaps and the danger of falling off the raised parts in the track are some of the hazards you'll have to overcome, and believe it or not, the game still runs at an amazing speed. The only problem with it being so fast is that you need lightning reactions, especially in the later tracks.

Power Drift is easy to get into because it's quite a straightforward game - all you really have to do is accelerate and change from low to high gear whilst speeding round the track. This means that just about anyone can play it, be-



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On the Amiga version you get the option of using a mouse control as well as a joystick. The sensitivity can be altered if required as in Super Hang-On.

When you start a game you get the aerial view as the camera zooms in on the action just like the arcade version. The still graphics look superb, but as you play the game you realise they don't move as well as they look, being rather jerky. At times, it's almost impossible to see what is going on and gets very confusing, so half the time you just have to guess which direction to go in. The thing I liked most was the speech. Its clear and there's plenty of it.

The main problem with Amiga Power Drift, is that it's too easy to play because of the continue option after each game. Therefore, lastability is not a main factor. Fun for a short while, but the 64 version is better conversion considering both machines' capabilities, and plays better for it.

Graphics: 80%
Sound: 85%
Playability: 70%
Overall: 72%
Price: £24.95

cause it may be a simple idea but it's a very effective and addictive one.

I was very impressed with the 64 version of Power Drift, because every track and course is loaded up in one go, so you don't have to wait during play. On first playing, you might think it's an easy game to complete, but come track four and all these thoughts will disappear. On previous tracks you can take the corners at top speed (224 kmh), but as you progress you'll have to start slowing down at the bends or you car (or should I say souped up lawnmower), will be sent spinning off the track time after time.

> *"On previous tracks you can take the corners at top speed (224 kmh), but as you progress you'll have to start slowing down at the bends."*

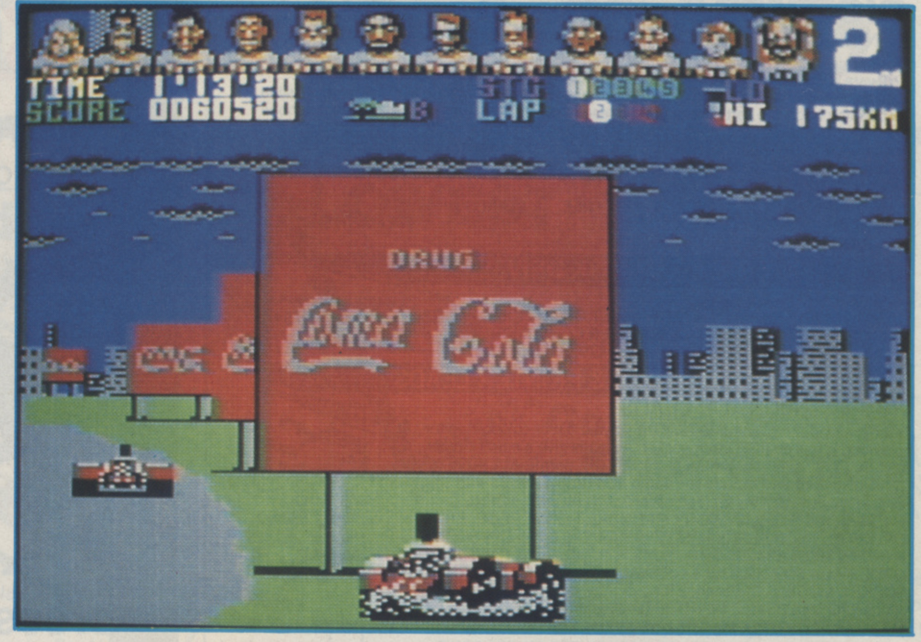
On the 64 version there are no road markings, so at times when there's no roadside scenery it looks as though you're not moving at all. Another minor flaw is when you crash, because sometimes you are put back on the road but right in front of a rock, resulting in an unavoidable crash.

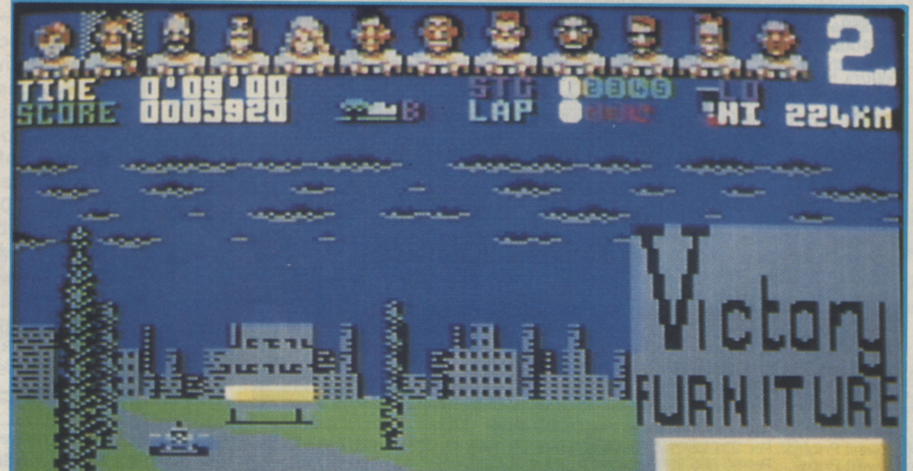
A soundtrack plays throughout the game but there are very few FX - a bit of speech would have gone down well.

You will have to watch closely or you won't appreciate some of the graphics that flash past. Use of colour is good and the sprites are well detailed and unblocky. I would be surprised if Power Drift doesn't make it to the top of the charts at Christmas - at last, an arcade conversion which is far from disappointing. A must for all racing fans.

D.H.

Graphics: 88%
Sound: 65%
Playability: 89%
Overall: 87%
Price: £9.99 (cass)
£14.99 (disk)





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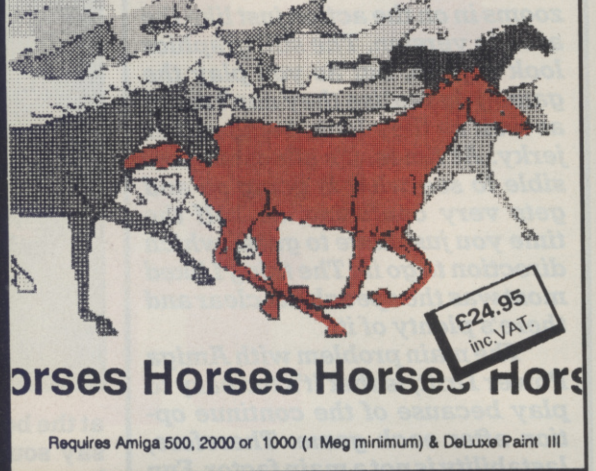
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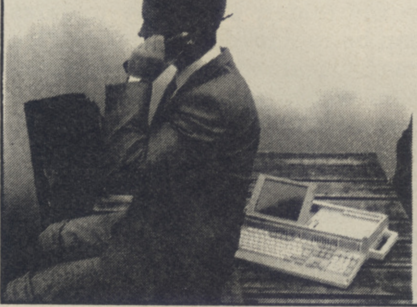

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HO! HO! HO! A SEASONAL GREETING TO YOU ONE AND ALL. IT IS THE TIME WHEN GOODWILL IS SHOWN A - PLENTY, AND LARGE DOLLOPS OF DOSH ARE SPENT ON STOCKING FILLERS. WHAT BETTER TIMING THEN THAN TO HAVE A MEGA REVIEW OF ALL THE LATEST ADVENTURES? SPEND YOUR MONEY WISELY, READ HERE FIRST

Adventure

BY ANDY MOSS

COMMENT

After last months in depth round up of all the latest adventures in the pipeline, the news desk is looking decidedly short of..., news. Just as well really, as it gives me more space to review quite a few new releases in time for the great shopping trips. BLOODWYCH, SCAPEGHOST, DEMONS WINTER, THE QUEST FOR THE TIME BIRD, OOZE AND SWORDS OF TWILIGHT are all under the Moss cosh this month, along with some of your letters. But first...

THE ADVENTURERS CLUB MYSTERY IS SOLVED

After many months of silence, innuendo and rumour, Henry Mueller has finally come out of hiding to reveal a new style Adventurers Club and a complete answer to his disappearance. He says 'Basically the Club was not financially viable under the then existing circumstances, and we suspended trading. It is a criminal offense for a company to continue trading if it is believed to be insolvent. Rather than just liquidate, and let down all our members, we decided to fight on by creating a totally new concept, one that would be much more viable. Our silence while not exactly a lesson in PR was due to our complete re-valuation and we did not want to mis-inform our members while this process was going on. Our new concept is titled the Reference Book Of Adventure, and will consist of a deluxe binder with 26 sections, each detailing a different facet of adventuring. We will publish pre-drilled, numbered and referenced sheets which will each be filed in its own place in the folder. That way updates can be replaced, and information can be retained. All existing members registration fees will be transfered, the only extra cost will be for the binders which will cost £6.95.

On one hand, it is comforting to know that Henry is trying his best, on the other, I will reserve judgement until I see the fruits of his labour.

HOUND OF SHADOW UPDATE

The latest batch of oddities from EA include a manual about the history of Holy Trinity Church in Blythburgh, a train ticket and a postcard. Curiouser and Curiouser!

ADVENTURE POSTBAG

Dear Andy,
Could you help me, I understand you can buy an adventure called LABRYNTH based on the film. Where do I get it please?
Debbie Hunt, Kent

Labyrinth is a Lucasgame product that was released by Activision in this country. Yes, it is based on the film and yes, it is available still from certain software retailers. Best bet is to contact Activision direct on 0734 311666.

Dear Andy,
I have been following your pages since they first appeared in CCI and have always found them helpful when I am stuck. Can you help me though, in JOURNEY I cannot communicate with the Elfin Lady by the pool of water.
Roger Myhre, Norway

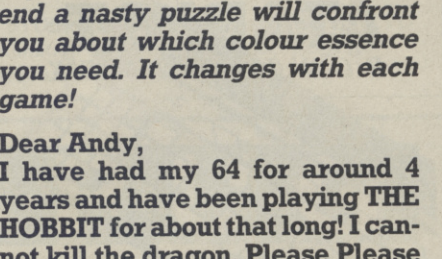
You only have to say two words Roger, B'RAN AGRITH. Also take note of everything that Praxix says about the essences, as at the end a nasty puzzle will confront you about which colour essence you need. It changes with each game!

Dear Andy,
I have had my 64 for around 4 years and have been playing THE HOBBIT for about that long! I cannot kill the dragon. Please Please help me.
J Gardiner, London

The only way to kill the Dragon is to get him to follow you somehow. Once you have worked that out, lead him to a wet place!

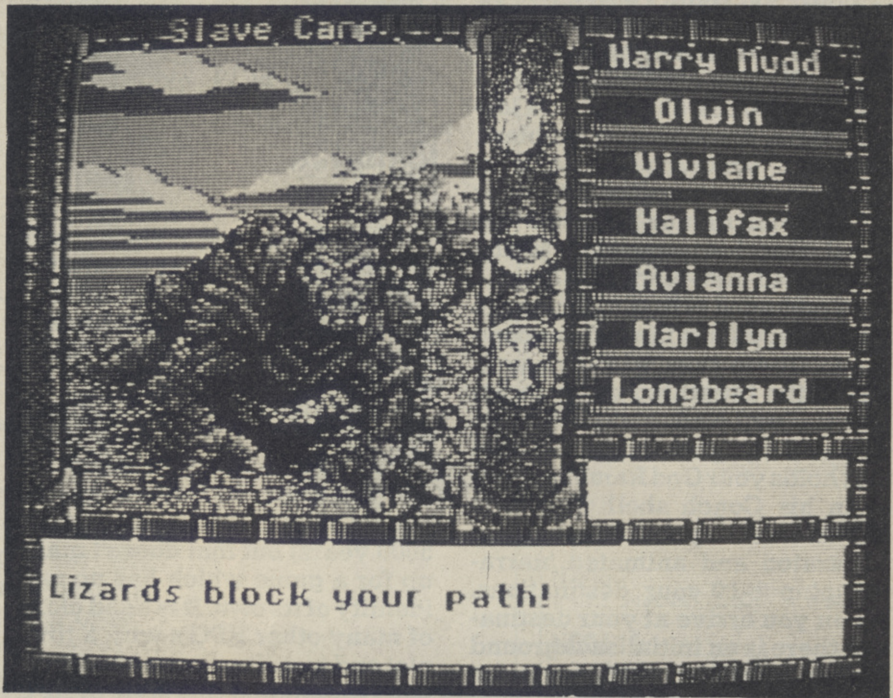
EMPIRE TO RELEASE TIME

Time, is the title of an new animated adventure from Empire. It sounds like a Lords Of Time scenario with you chasing across

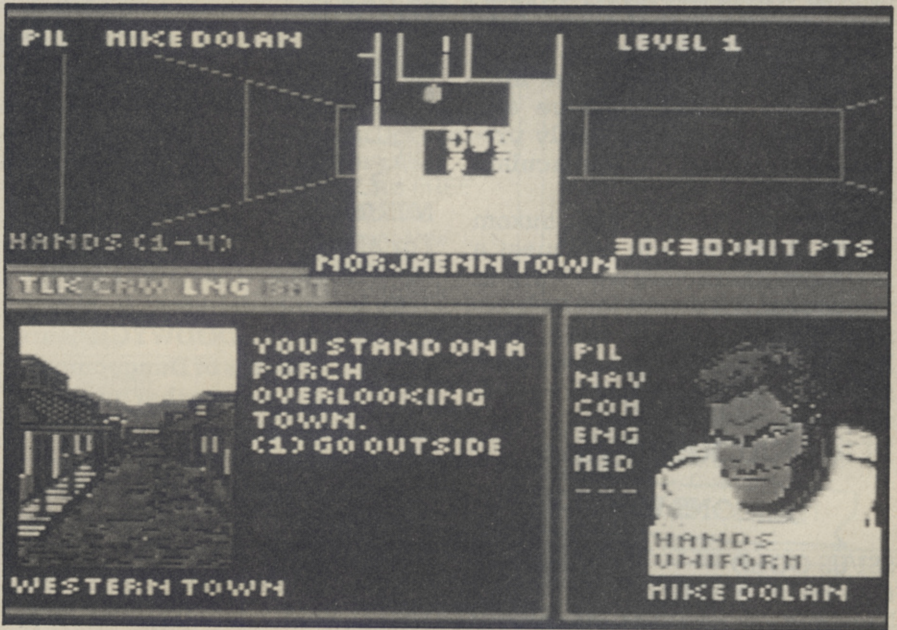


famous eras of the past, in the Lions den at the circus Maxixmus in Ancient Rome, getting shot at in the Crimean War and being accosted by the model for the Mona Lisa, even getting a lesson in magic from Merlin. You are from the future, and must create the perfect android, by finding a discarded time machine and journeying into the past. An interesting icon control system is used (see pics) and it all sounds quite exciting.

HERE ARE SOME EXCLUSIVE SCREEN SHOTS OF EA'S NEW RPG'S DRAGON WARS AND SENTINEL WORLDS. LOOKING GOOD AREN'T THEY?



Lizards block your path!



YOU STAND ON A PORCH OVERLOOKING TOWN.
(1) GO OUTSIDE

ADVENTURE REVIEWS

SCAPEGHOST
LEVEL 9
64/AMIGA/PC

This game marks a landmark in Level 9 adventures, as it is the very last text only product. WHAT! I hear you gasp? Yes folks, the Austin boys have taken this decision as they feel that technology demands it. With the increasing memory and speed that today's home micros are capable of providing, they want to see computer adventuring moving on to bigger and better things, which means the traditional text game is dead. More about their new plans another time but for now let us concentrate on Scapeghost. In this story, (originally thought up by Sandra Sharkey and our own Pete Gerrard) you play the part of a murdered detective, Alan Chance, who was on an undercover drugs mission before his/your untimely death. Someone had alerted the drugs gang and betrayed you, whilst your colleagues in blue feel you made a tragic mistake and brought about your own demise. You have three nights as a ghost, to disprove these accusations, and clear your name. The game uses a great deal of Level 9's character interaction techniques, as you enlist the help of other ghosts in the cemetary to assist you in your mission. At the beginning you have very little strength, and so can only lift one particular item, once done you gain a bit more strength, until finally at the end of part one (there are three parts) you are strong enough to develop other ghostly powers, which will prove invaluable in part two.

Level 9 use what they call 'racetracking' a high level command that lets you go from one named place to another in the game without tedious retyping directions. Very useful when you have explored most of the area and are wanting to get from a to b quickly. The graphics are very pretty, and scroll mag slides up the page as you wish. There is RAM save and load for those sticky moments, and best of all, you can't really die, can you? The usual high quality release from a very talented company.

PERSONAL RATING......8

THE QUEST FOR THE TIME BIRD
INFOGRAMMES AMIGA ANIMATED ADVENTURE

This release is another of Infogrammes computer versions of classic novels. Similar in play to Passengers on the Wind, TIME BIRD is a much meatier subject with plenty of hack and slay and magic. The graphics are really pretty, with some fine animation and sound sequences, the only

continued on page 56

continued from page 55

thing that lets it down is the rather clumsy icon arrangement. This is something that Infogrammes never really get right, Passengers on the Wind suffered from an incredibly fussy command system, Murders in Venice also, so it must be said that QUEST although to a lesser extent, has a similar problem. The plot concerns the land of Akbar, and its possible take-over by the evil Ramor who has decided that his ascension to the throne will take place in 9 days.

Your quest is first to locate the ledgendary Time Bird whose powers to freeze time will give your forces the breathing space to defeat the evil lord, and then to locate and decipher the incantation that holds your God Ramor prisoner in his Conch shell. Travel is shown on a map screen where an illustrated and animated 'narrator' pinpoints your destinations. When you arrive at your destination there is an initial background screen, on which extra windows appear where necessary to illustrate any events that occur. Also there is a box for text which scrolls up giving you clues and info. There are riddles to solve and treasure to locate, all richly presented using immaculate graphics.

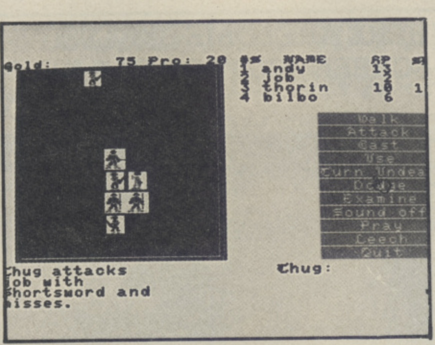
Ably assisited by your buxom friend Roxanna, you will meet a few more characters who will join your quest. If it wasn't for the fussy icon disply I would have gone head over heels for this game. As it is, it loses points but is still a beatiful product.

PERSONAL RATING......8

DEMONS WINTER

SSI/US GOLD
C64/AMIGA RPG

This RPG from SSI is effectively the sequel to SHARDS OF SPRING, although I feel far from being an improved product is significantly poorer. The Amiga version is poorly programmed, and is no better graphically than an average 64 game. The 64 version is passable, but lacks any new ideas from the traditional SSI approach. The plot is fairly boring, you have to scour the landscape for the spells needed to contain the Demon Malifon inside his volcano, rather than let him out to cause havoc. Although he is inside his volcano, he still had the power to turn the landscape into a frozen wilderness, and the oceans into crimson blood. So your party of five brave souls sets off for adventure.



```
Chug attacks
Job with
Shortsword and
hisses.
```

Apparently Demons Winter is some 32 times bigger than Shard Of Spring, and many locations are still there for old times sake,(the events have moved forward some 5000 years) but that doesn't make up for a game which has no real identity of its own. It is a sad clone of many other RPG's with a tired plot and a well worn design. I must say I am finding this style of RPG very tedious nowdays and it is high time a new approach is looked at.

PERSONAL RATING......2

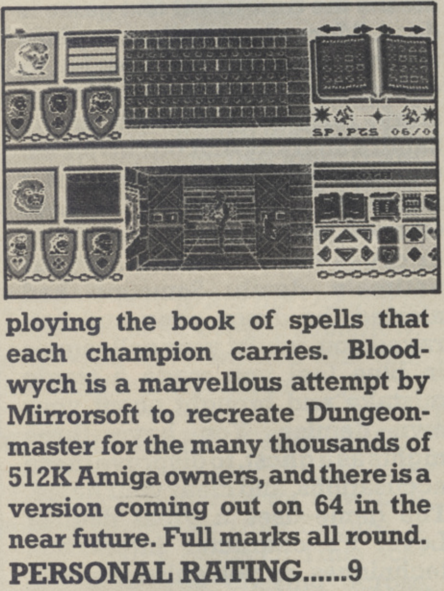
BLOODWYCH

MIRRORSOFT AMIGA RPG

For all you fustrated DUNGEONMASTER fans who do not have the 1Mb memory required to play it fret no more. BLOODWYCH bears all the hallmarks of Dungeonmaster, goes one step further by allowing simultaneous play by two players using a split screen technique, and packs it all into 500K. You are one of the Bloodwych, and must take on the persona of one of the last sixteen champions of Trazere (sound familiar?) You must then explore the dungeon-like world of Treihadwyl to recruit more champions (also sound familiar?) and then explore the corridors and rooms for the four crystals of Storing. Then you go to the fifth tower and destroy Zendick to the realm of chaos freeing the world from the Lord of Entropy.

The screen layout of Bloodwych is almost identical to Dungeonmaster, the only obvious difference is the two player option.

The split screen effect is lot like the old Epyx racing game Pit Stop II with each horizontal slice exactly duplicated, with the same icons and first person perspective in each. Communicating with the characters in the game is rather novel, as each character has a fair degree of intelligence built in, so skillful communication could prove very useful. There are a number of initial conversation options, RECRUIT, IDENTIFY, INQUIRY, WHEREABOUTS. You then get a second sub menu which shows OFFER, PURCHASE, EXCHANGE, SELL. SMALLTALK is another option which gives you another sub menu, YES/NO, BRIBE, THREAT, COMMEND, CORRECT. So you can see ther is a fair amount of flexibility here. Magic is of course of paramount importance, and spells must be mixed before they can be used, employing the book of spells that each champion carries. Bloodwych is a marvellous attempt by Mirrorsoft to recreate Dungeonmaster for the many thousands of 512K Amiga owners, and there is a version coming out on 64 in the near future. Full marks all round.



PERSONAL RATING......9

THAT'S ALL THE ROOM I HAVE THIS MONTH, HOWEVER, NEXT MONTH THERE WILL BE ANOTHER BATCH OF REVIEWS INCLUDING MURDERS IN VENICE, CURSE OF THE MUMMY, DAYS OF THE PHAROAH AND SPACE QUEST III. NOT FORGETTING THE REST OF THE BARDS TALE II SOLUTION . SEE YOU THEN... IN THE MEAN TIME HAVE A MERRY XMAS AND MAY YOUR STOCKING ALWAYS REMAIN FULL.

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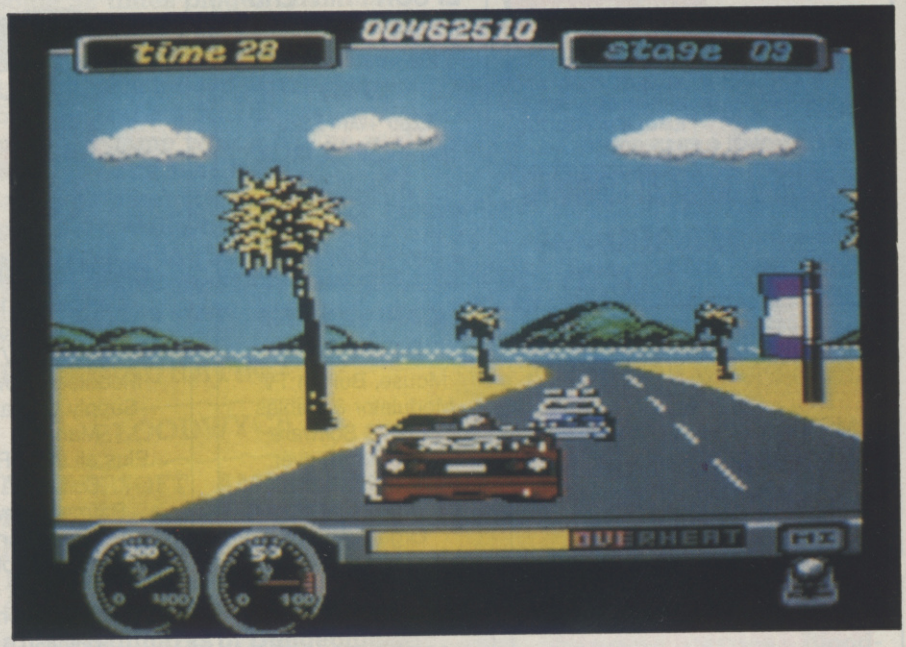
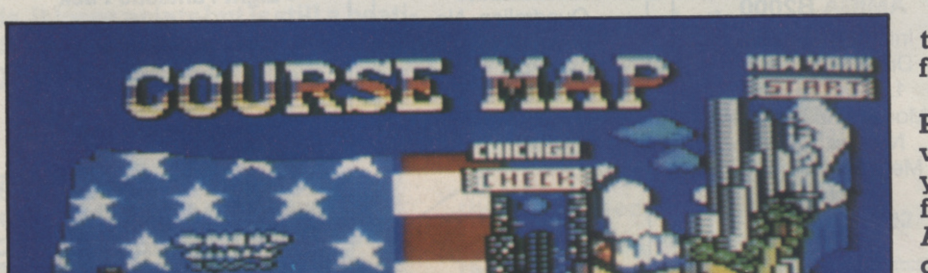
Turbo Outrun

US Gold

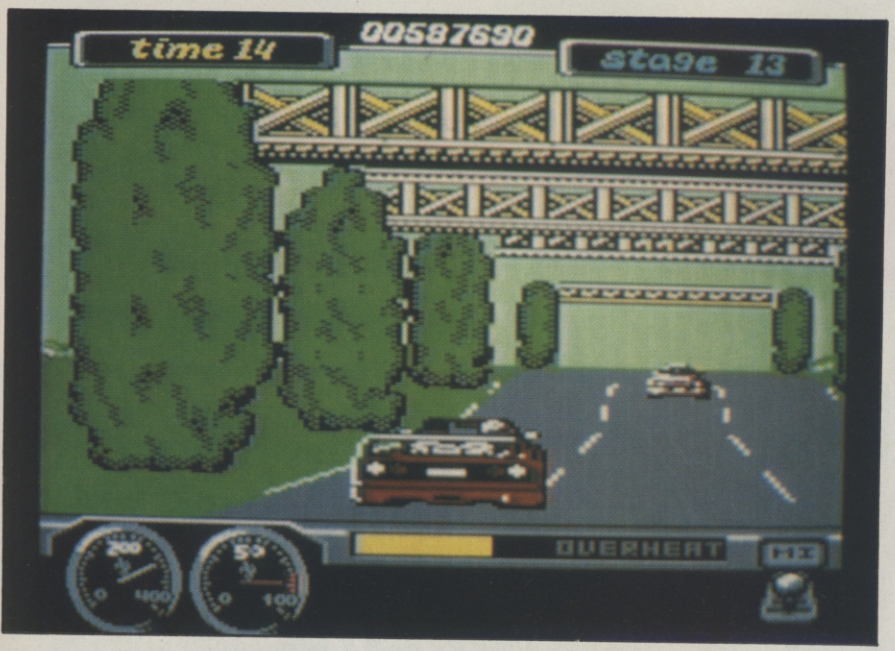
Will the games-buying public forgive and forget the mess US Gold made of the 8-bit Outrun conversions two years ago? US Gold are banking on it, but you'll be pleased to hear they've made a stronger effort this time round. A new team was given the job of the 64 conversion, and first impressions are far better.

> *"The highly criticised stripey road has gone, replaced by a far neater, smoother-running alternative; smooth that is, until you start weaving between the traffic."*





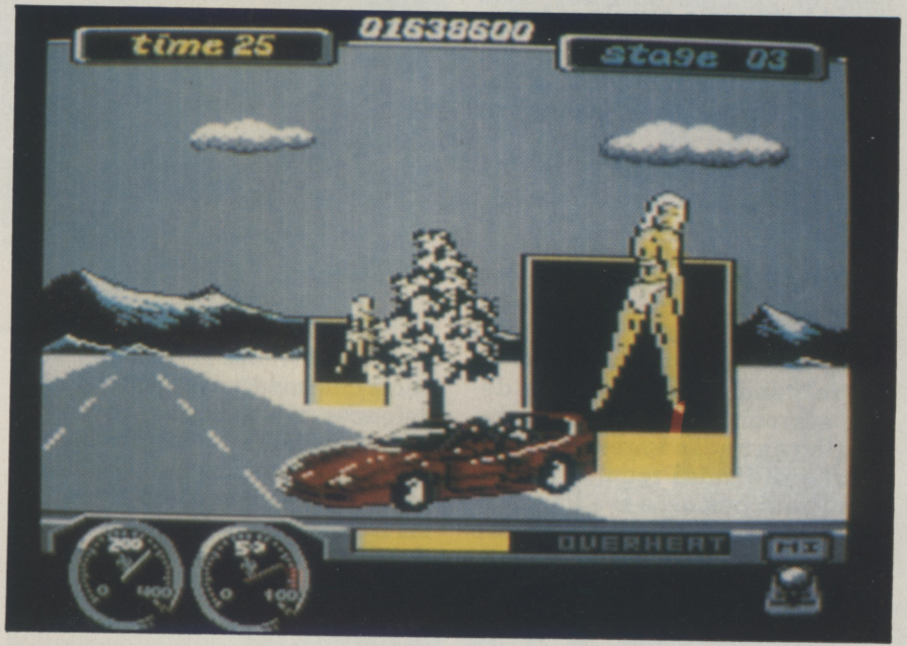
Compared to Chase HQ or Power Drift, Turbo Outrun has very few new features. In theory, you're driving your Ferrari F40 from the East to West coast of America, in a race against a Porsche. In reality, the game is almost identical to Outrun, with the addition of a turbo feature, and the omission of the forking road. The highly criticised stripey road has gone, replaced by a far neater, smoother-running alternative; smooth that is, until you start weaving between the traffic. The effect is spoilt as the road jerks in large steps across the screen, without a change in perspective. Brightly coloured office blocks, trees and billboards shoot past on

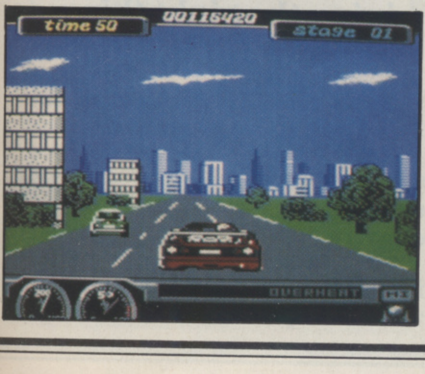


the roadside. I'd like to be able to say they move smoothly, but they're no better animated than those of the original Outrun. Similarly, the other cars on the road drive along in noticably large steps.

There are occasional breaks and variations in the rather plain gameplay. You'll encounter a variety of weather conditions (rain, snow and sandstorms), although they seem not to affect the handling of the car. Driving over a log on the road will launch you into the air for a second, and colliding with awkward barriers slows you down. There's an opportunity to soup up your car at points through the game, from a choice of hi-grip tyres, a more powerful engine, or a turbo extension. Hills have also been included, but are small, unrealistic, and not a patch on those of Power Drift. Although the graphics are poorly animated, on the whole they're well drawn, and some of the objects are pretty big close up. Working dials have been placed in the bottom border to free more space for the game. The course map is superbly created in colourful cartoon style, as are the rest of the still screens.

U.S. GOLD





> *"Working dials have been placed in the bottom border to free more space for the game."*

The few sound effects are nothing special, and the twee in-game music is less than entertaining. A lot of effort has been put into the inclusion of the coin-op's presentation screens. Some are accompanied by digitised music, but the coarse quality of the samples is disappointing. They are good considering the 64's limited sampling facilities, but I'd rather hear clearer SID-generated sounds.

For all its flash presentation, Turbo Outrun is still a simple, rather jerky 3D racer. I'm informed by Probe that Turbo has a higher frame-update rate than Power Drift, but it's still not nearly as smooth and gives an inferior impression of speed. The jerky movement is not just a cosmetic imperfection, as it allows far less accuracy when dodging the obstructions. It's not the complete disaster its predecessor was, and I can't deny it looks great in still screenshots, but out of the two, Power Drift gets my vote by a long shot.

T.H.

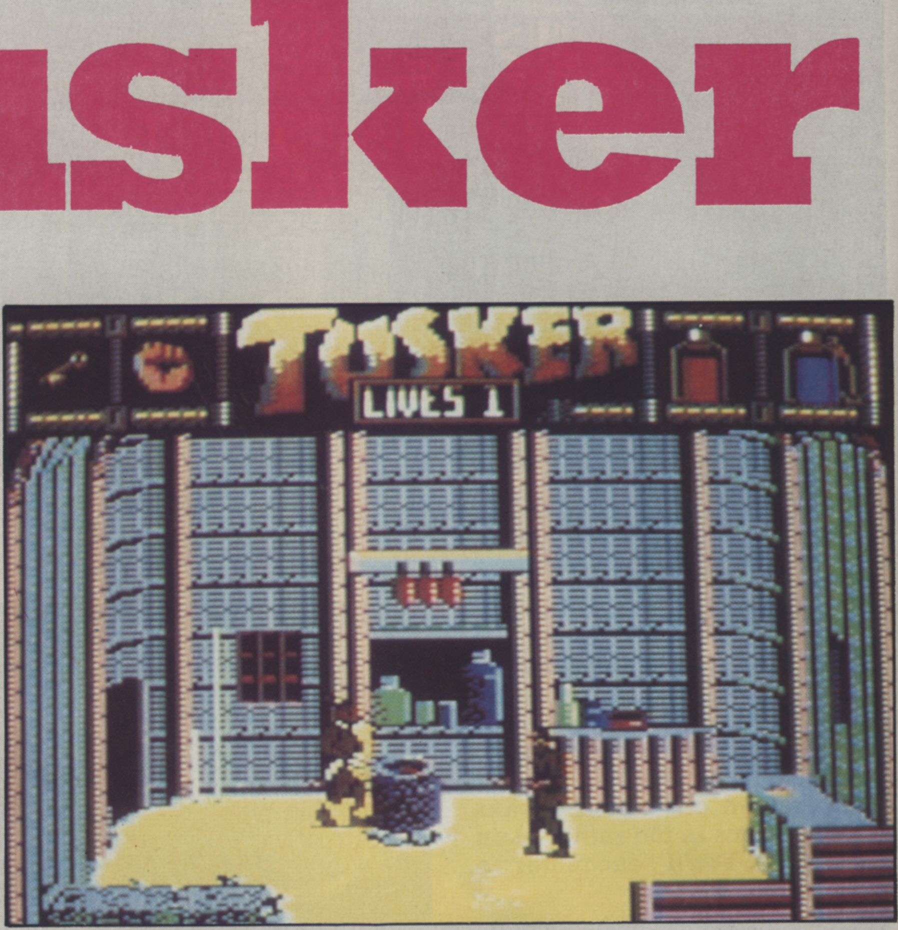
Graphics: 74%
Sound: 65%
Playability: 62%
Overall: 63%
Price: £9.99 (cass)
£14.99 (disk)

Tusker

System 3

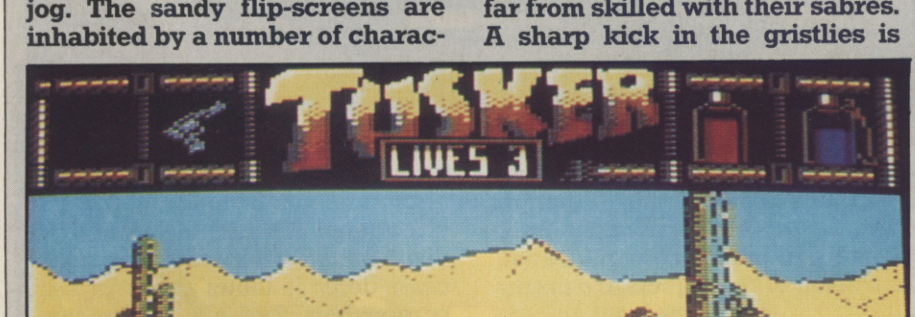
Your father, and many before him, dedicated their lives to the search for the fabled elephant's graveyard. Apart from a fortune in Swahili phrase books, it also cost your father his life. When they found his corpse, floating down the Turkwel river skewered between a couple of tomatos, in a fit of insanity you decided to pick up the trail.

> ***"A sharp kick in the gristlies is enough to reduce them to a pile of bones."***



After a quick rummage through your dad's trunk, you kit yourself out in pith helmet and safari suit. Before you know it, you're standing in the Sahara desert surrounded by irate arabs. Bearing an uncanny resemblance to the sprite from Predator, you set about your business at a leisurely jog. The sandy flip-screens are inhabited by a number of characters, all of whom are hostile. You came unarmed, so your only initial defences are a high kick and a couple punches you picked up from a documentary on Thai Boxing. Luckily for you, the arabs are far from skilled with their sabres. A sharp kick in the gristlies is enough to reduce them to a pile of bones. Grab hold of a knife, and you can take them out from a safe distance. The knife also has a second use. Water is in very short supply, and at the rate a sweaty explorer gets through it, your canteen will be empty in minutes. Fortunately you can get a top-up by piercing one of the large juicy cacti (evidently not of the poisonous variety and of course they make tequila from them). Although strangely enough, it seems impossible to refill your canteen from the deep pool in the cave.

> ***"The puzzles are actually rather straight forward, and involve giving the right things to the right people, unlocking doors and the like."***

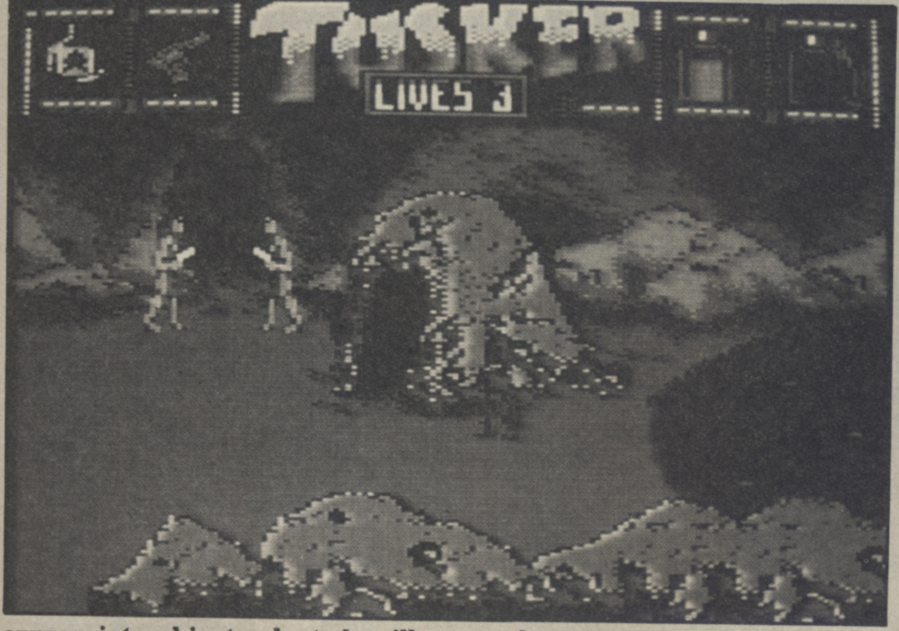


A guide to the first level is included in the instructions, which helps set you on the right train of thought for the rest of the game. Sadly the rest of the instructions are not so helpful. They explain how to pick up objects, cycle through the inventory and use weapons, but are very misleading when it comes to the use of objects. It implies that the "pick up" control doubles as a general "use" function. Occasionally, this is the case, but often it's not. The instructions tell you that punching, with the appropriate object selected, will use it, but it says this only applies to one of the many problems in the game. In fact, the punch very often doubles as a "give" command, but that's left for you to find out.

Solving the puzzles is made even more awkward by the unclear graphics. When you're not sure what you've just picked up, or what that wobbly brown thing is, working out a logical solution to the vague problem is a matter of trial and error. A couple of times, the solution to the problem in hand only became apparent after poking various objects at an assortment of background features. The puzzles are actually rather straight forward, and involve giving the right things to the right people, unlocking doors and the like. Any of the less logical problems are so clichéd that they're immediately obvious.

Tusker is very much like The Last Ninja, without the isometric view. It loses nothing from the more conventional (but still psuedo 3D) layout, but the design of the graphics is far below TLN. Some of the larger monsters are impressive, but many of the backgrounds are messily drawn and coloured. There are no sound effects; instead each level has its own music score, all of which are satisfactory without creating much of an atmosphere. With only weak beat 'em up action to create the arcade element, Tusker is not gripping. Either you'll work your way through the puzzles and levels fairly quickly, in which case you'll be unlikely to come back to it once you've finished it, or else you'll spend longer mincing around each level, getting bored and frustrated working out what to do, whilst being harassed by persistent enemies. Worth a playtest if you liked either Last Ninja I or II, but Tusker's just not in the same league.

T.H.



Graphics: 65%
Sound: 78%
Playability: 60%
Overall: 62%
Price: £9.99 (cass)
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With no predators other than man, an elephant's life expectancy is governed by its teeth. The lucky ones, who escape the hunter's rifle, will live as long as they have teeth. Once their last pair have fallen out, chewing food is impossible, and soon after they'll find themselves at the watering hole of the big game reserve in the sky. It's said that these wizened beasts make their way to a secret elephant's graveyard, where they finally throw in the towel, and this promise of emmense quantities of ivory is too much for many an unscrupulous adventurer to resist.

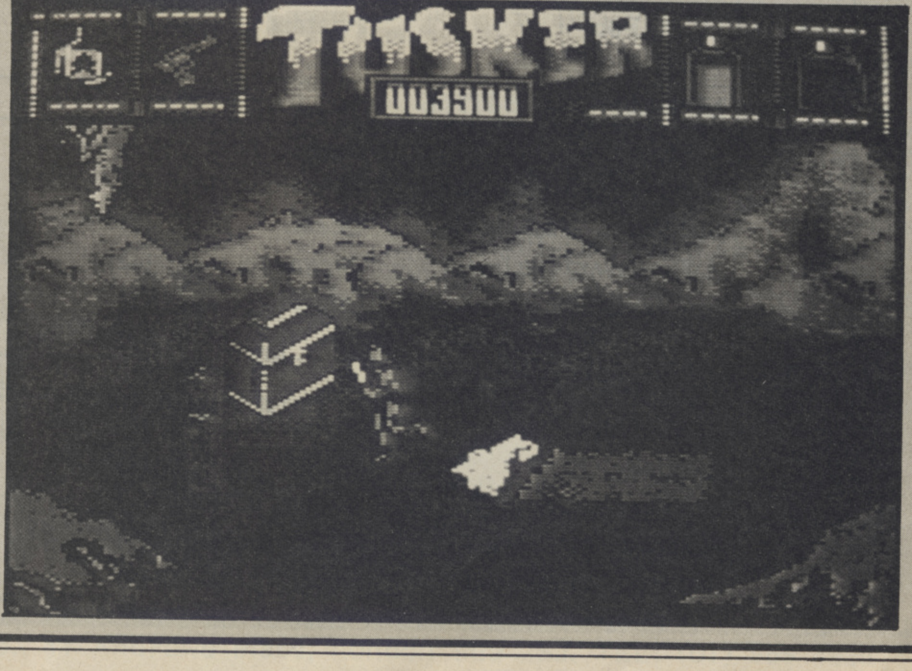

CHART SHATTERING EVENTS !

So as we predicted, the Batmobile screeched up to the Big Number One. How could it not with all that hype and every unhip preteen sporting the T-shirt? O.T.T. the whole thing may have been (the Joker gets Jack Nicolson the Oskar for HAM of the year !) but the game wasn't bad anyway, certainly worth the pre-Xmas Top Spot. Old Budgeteers Virgin-owned Mastertronic reach an unexpected level with Continental Circus, the highest new entry at Two and have Shinobi at Four. But, as is to be expected, powering up the Chart comes Powerdrift from Activision (though there are some odd rumours that company starting to speak with a French accent!). U.S.G's hottest just now is Strider, goodlooking and good to play. Bubbling under ees anozzer Hactiveesieon jeu le nastee-titled Altered Beast. Attention le next chart for Zat one !

In the Amiga line up Imageworks volcanic Xenon II (the Megablast to you) clutches the Numero Uno firmly. Those Bitmap Brothers really swing their coding wands, don't they? But there again the Black Caped Crusader comes flying in after the Amiga in the bronze medal spot. Psygnosis megabucks production (£34.99!) Shadow of the Beast looms in the top Five in spite of its price (T-shirt and all). But watch out for Powerdrift on the 16 Bit Map too.

The almost last group of the eighties budget sees one of the best of the decade, Wizball take the honours with newest entry Hypersports hitting Three. And Monty is back. The old Gremlin favourite has K-xxed his way to stardom once more at Five. You can't keep the real stars down can you?

Z.M.S.

(C64) GAME TITLE	COMPANY	LAST MONTH	RATING	PRICE
1. Batman - The Movie	Ocean	(10)	70%	£9.99
2. Continental Circus	Virgin	(–)	50%	£9.99
3. New Zealand Story	Ocean	(1)	88%	£9.99
4. Shinobi	Virgin	(4)	76%	£9.99
5. Indiana Jones	U.S. Gold	(2)	69%	£9.99
6. Powerdrift	Activision	(–)	87%	£9.99
7. Kick Off	Anco	(5)	31%	£9.99
8. Rick Dangerous	Microprose	(3)	90%	£9.99
9. Strider	U.S. Gold	(–)	TBA	£9.99
10. 3D Pool	Firebird	(7)	80%	£9.99
(AMIGA) GAME TITLE				
1. Xenon II	Imageworks	(–)	90%	£19.95
2. Populous New Worlds	Electronic Arts	(5)	80%	£9.99
3. Batman - The Movie	Ocean	(–)	78%	£24.99
4. Shadow of the Beast	Psygnosis	(–)	80%	£34.99
5. RVF Honda	Microstyle	(2)	80%	£24.95
(BUDGET) GAME TITLE				
1. Wizball	Hit Squad	(5)		£2.99
2. Pitstop II	Kixx	(1)		£2.99
3. Hypersports	Hit Squad	(–)		£2.99
4. Rally Cross Sim.	Codemasters	(–)		£2.99
5. Monty on the Run	Kixx	(–)		£2.99

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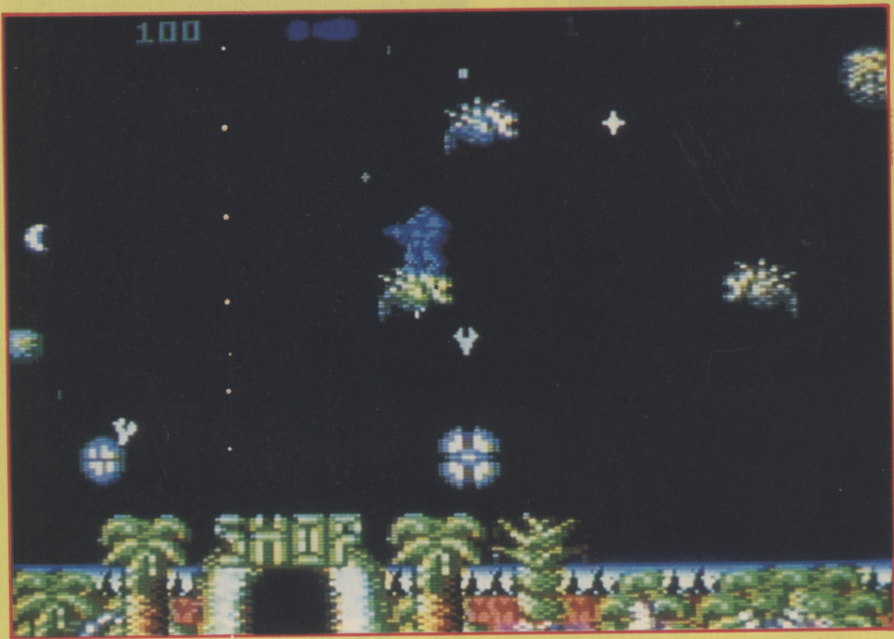
Retrograde

Thalamus



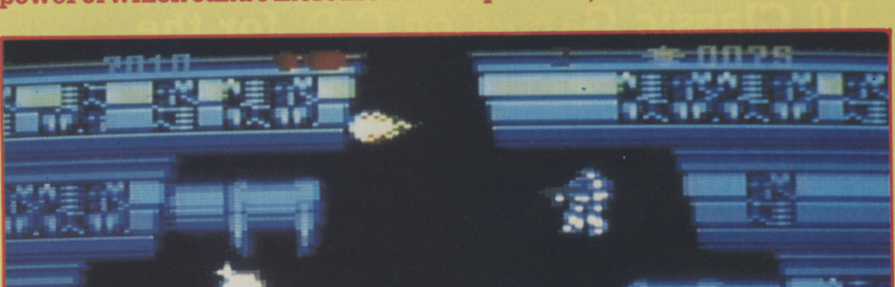
Original shoot 'em ups are extremely rare. Many attempts to produce a shoot 'em up with depth, and new ideas, result in a game based on an old design, with awkward bolt-on extras (take Morpheus for example). Retrograde is one of the few games to get the balance right, including a wide variety of features and weapons, but keeping the emphasis firmly on the action.

Retrograde is a little more complex than your average zapper. Your object is to destroy seven planets. Rather than flying along a tunnel before blowing up a big alien, this time your technique comprises three distinct stages: alien anhilation and consequent cash collection above the planet surface, the journey to the planet's core, and the destruction of the enormous guardian.

It all begins in familiar fashion above that horizontally scrolling planet surface. You may be kitted out in a shiny new suit of armour, with a snug pair of hovver boots, but your basic arsenal is not up to much. Your first priority then, is to get yourself a decent shooter. Blasting the semi-random attack waves of aliens will reveal cash crystals. Scoop them up before they fade away, take them to the shop and you can start upgrading your firepower. Of a total of twelve weapons, only two are available during the first level, the power of which can be increased a number of times. Around your armour are sixteen weapons ports. When you buy a new weapon, you get to choose which port to plug it in to, determining the direction of fire. Alternatively, you could spend your cash on upgrading the power of any established weapons. As you progress through the levels, more of the weapons are made available, and, as you never lose any weapons (unless you sell them), you'll gradually build up some immense firepower.

> *"Turning off your hovver boots, you touch down on the surface. Now your lasers are replaced by your fist."*

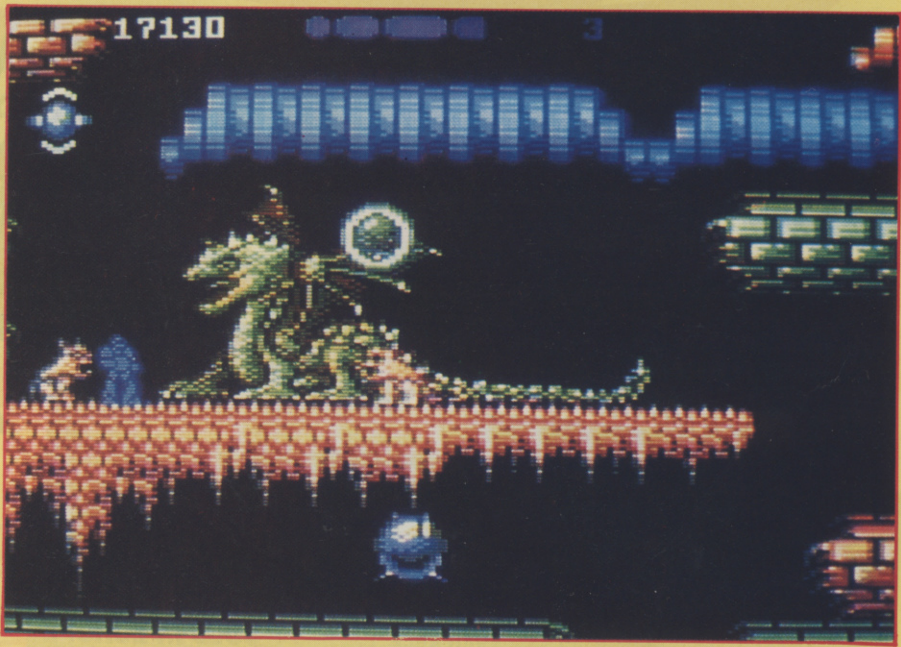
That's all well and good, but so far it hasn't got you any nearer to blowing up the planet. Once you've amassed a suitable range of weapons, you can start saving towards the 500 credits it costs for a detonator. Before you can buy one though, you need to find the explosives, which are held by the



aliens down on the ground. Turning off your hovver boots, you touch down on the surface. Now your lasers are replaced by your fist. Find and beat up the right alien, and you'll be rewarded with the exlosives. It's then back to the shop to buy the detonator.

One of the ducts leading to the core will now be open. On foot once more, you make your way down the alien-ridden shaft. As you hop from one platform to the next, some aliens are best avoided, whilst the impassable nasties must be punched into submission. At the bottom of each shaft is a guardian, the killing of which plants the charge. Level one has a couple of these ducts to be penetrated, but the number increases with each level.

"Loads of colourful sprites fill the screen, parallax scrolling is in abundance, and it all moves perfectly smoothly at a very high speed."



With all that done, all that remains is to sort out the big planet guardian. Unlike most, those of Retrograde really are massive. The first ties in with the hi-tech style of the first level, looking like something from Armalyte. More stunning is the gruesome second level guardian, a fish and a frog joined together like siamese twins. If you forget to tool up with a vertically-firing laser before you meet this slimeball, you've had it.

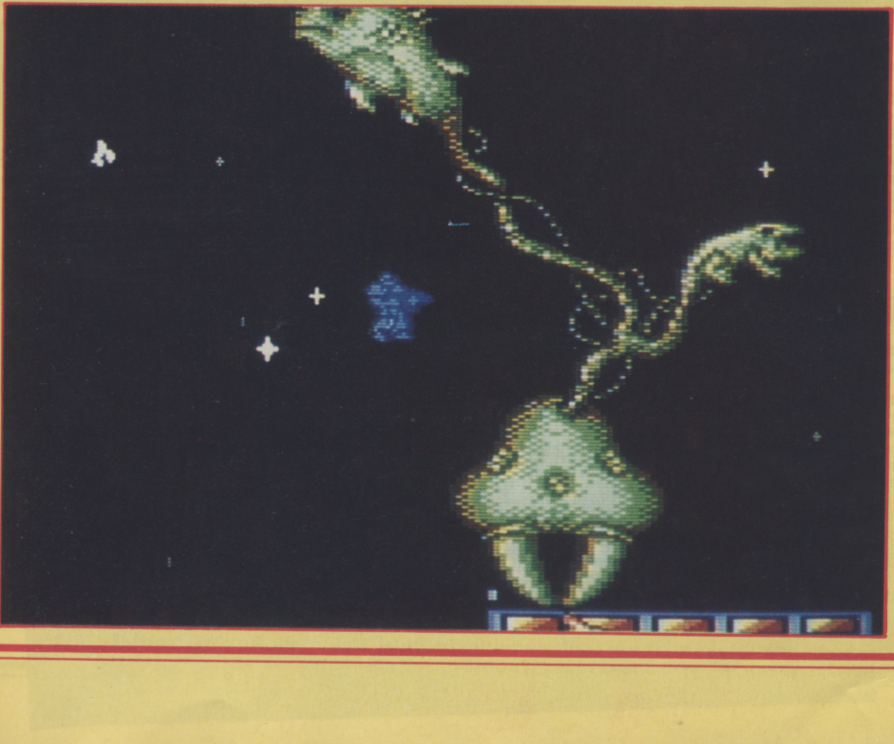
Programmers Apex have not shied away from a multi-load format, but don't let that put you off. Rather than simply loading in a new level layout, the program goes all out for variety. Each level, apart from a new layout, has a completely different theme, new aliens, new weapons, more of the platform stages, and a whole new level guardian.

Technically, Retrograde is one of the most advanced games ever seen on the 64. Just about every trick in the book has been used to excellent effect. Loads of colourful sprites fill the screen, parallax scrolling is in abundance, and it all moves perfectly smoothly at a very high speed. There's also a decent set of sound effects, along with range of funky tunelets.

Retrograde could have easily been spoilt by over-design. Fortunately, the Apex team have not run away with themselves, developing the gameplay above simple blasting, without presenting the trigger-happy player with reams of stats and a fragmented gameplan. The size, variety and consequent lasting appeal of the game more than justifies the multi-load. Surprisingly original for a zapper, superbly presented, and very playable, Retrograde is by far the best thing to appear for the 64 recently, and rates as one of the finest ever 64 shoot 'em ups.

T.H.

"Retrograde is by far the best thing to appear for the 64 recently."



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Playability: 91%
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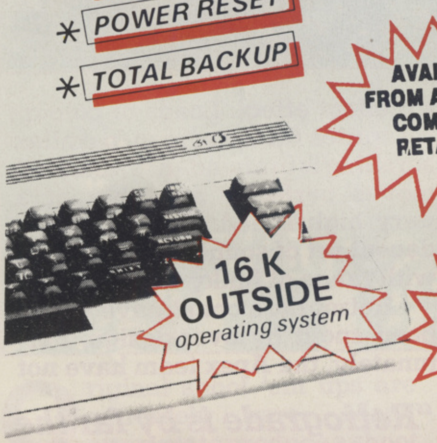

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PSET C - *Setting Lower/Upper case and sending Control Codes.*
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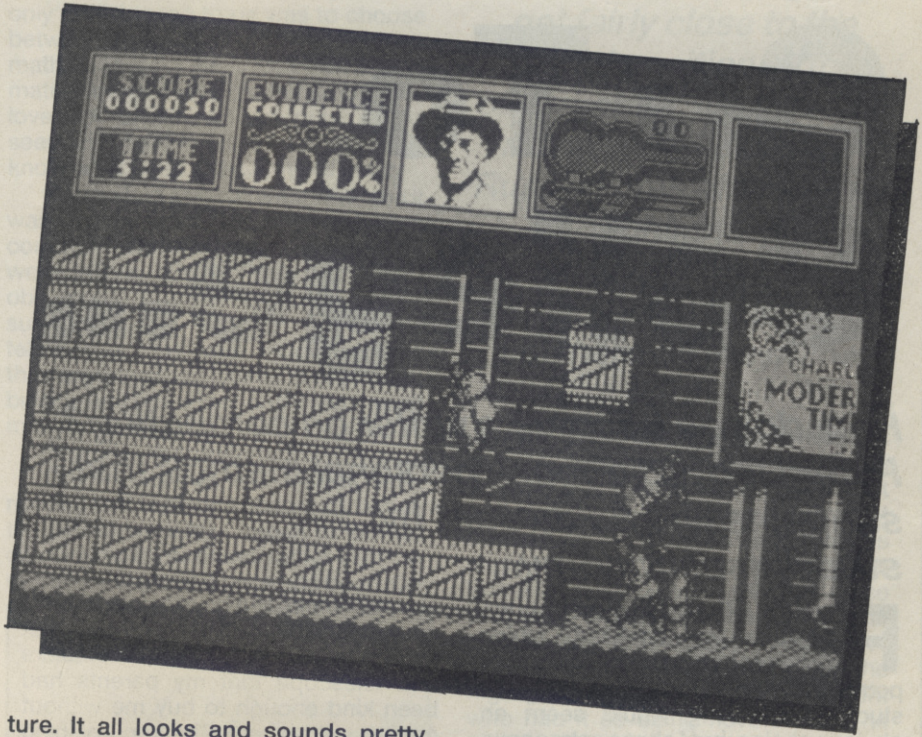
Hot from their special release at the Commodore Show, Tony Horgan came panting back with a couple of goodies clenched in his sweaty palm …

The Untouchables

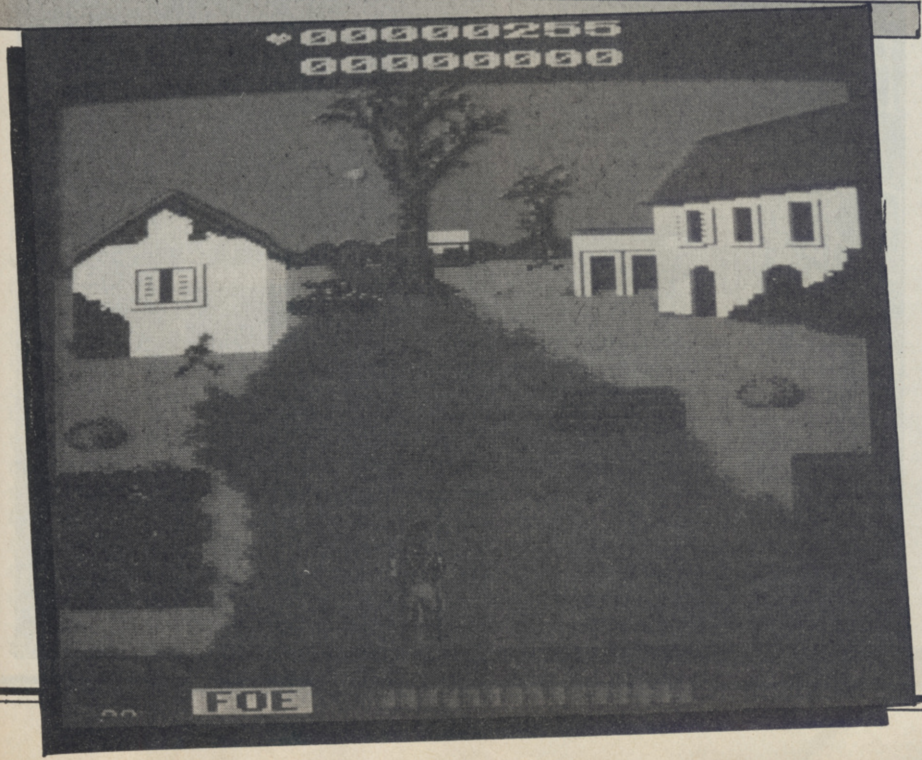
With Batman at number one in the charts, Ocean have just released their follow up film tie-in, The Untouchables. It arrived just too late for a full review this issue, but here is a taste of what it's all about.

You probably remember from our Ocean profile in the November issue (did you notice the deliberate mistake that Ness is a character in the movie, not the star!), that the game follows the plot of the film, concentrating on six of the most spectacular scenes. The story of prohibition, cops and gansters, begins with a raid on a warehouse, which is being used to run Capone's illegal liquor business. It turns out that some of the bookeepers are there, who hold evidence of Capone's underground dealings. Leaping around the stacks of crates in the spacious warehouse, you have to deal with the small time gangsters. Whilst tracking the bookeepers. Collects enought evidence and it's on to scene two.

As the following five levels are all based on different scenes, each has its own unique look and game structure. It all looks and sounds pretty classy, and I'll bet it plays just as well. All the same, best wait for the review next issue.



Cabal



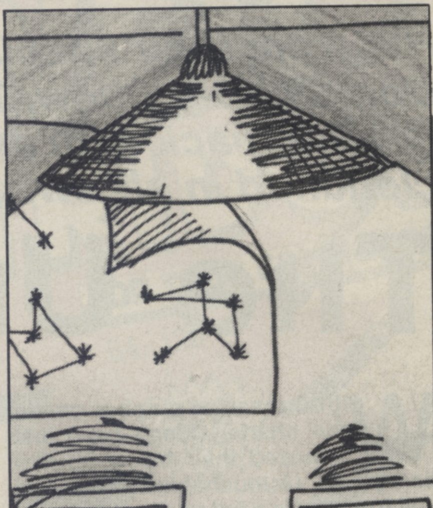
It's been dismissed as an average Operation Wolf clone in the arcades, but a couple of games ofthe 64 version were enough to convince us that Ocean have done a great job of the conversion. A one or simultaneous two-player game, Cabal is very much like Ocean's number one of last Christmas, but instead of a first person viewpoint, you get to see both players at the bottom of the screen.

In typical coin-op style, the gameplay is extremely easy to pick up. Armed with a machine gun and hand grenades, you guide a sight around the screen, bombing and shooting everything in sight. That includes soldiers, tanks, and even the buildings and arms dumps. Plenty of noisy chaos insures a palm sweatier than a buffalo's armpit. More details in the full review next month.

T.H.

So You Want To Go To College...

How do you become a writer on computing? Peter Gerrard offers a personal memoir that suggests you could start by studying astronomy...



Plenty of CCI people must be in the position of deciding which college to go to in the distant, or perhaps not so distant, future. What to study? Computing would seem an obvious choice, but I chose astronomy, which probably has more computing than a computing course! My intention was to take the first steps towards obtaining a job in the world of astronomy. I never made it ...

I had originally left school at the age of 16 (this is back in 1974) with sufficient O and A levels to get me into a university, if I had wanted to go there. At the time I did not, and precious few places were admitting students at the tender age of 16. As a result I spent some time working up in the far north of Scotland as a member of the Forestry Commission, and there the nights were so clear, the stars so bright, that what had been a mildly interesting diversion turned into a consuming hobby. It was the first time that I had seen the Milky Way properly. Not just as a hazy blur of light above the streetlamps but as an almost solid wall of stars, visible across the entire sky. It was also the first time that I had seen a display of the Aurora Borealis, and a very powerful display it was too: nobody had told me that there was sound as well as vision!

This was it, I thought, forget Monty Python and lumberjacks, I wanted to be an astronomer. But how to go about it? I could spend night after night in the back garden peering through the binoculars and telescope that my parents had been kind enough to buy me without getting anywhere nearer gaining employment at the Royal Observatory (my ultimate dream). I could watch The Sky at Night until the cows came home,

but beyond developing an odd squint caused by rapid switching from television to telescope I was still getting nowhere.

And then, while watching an episode of University Challenge it dawned on me that I could use all those O and A levels and head off to university. What had originally put me off was that my qualifications were in mathematics and physics, and I could never see me persevering through three years of either of those two topics. However, after receiving several prospectuses (prospecti?) from places that had courses in astronomy or astrophysics I soon found that mathematics and physics were precisely what they wanted.

Having already passed the exams they could hardly make me an offer of anything greater than that which I had already obtained, I thought, and so merrily sent off forms to universities and was rewarded with two interviews: Newcastle and University College London. Apart from thinking that Newcastle was a dreary place (it was raining, and all places look grim when you visit them for the first time in the rain) the only thing I can remember about it is a third year student in a laboratory that we were shown around professing total ignorance of what he was supposed to be studying at the time. Of such things are decisions made, for the interview at University College London was a totally different matter.

> ***"the clincher was the place where they held the interview, which was at the college observatory at Mill Hill in North London."***

For one thing they took an interest in the notebook that I had been keeping from my amateur days, full of all my observations of planets and satellites, double stars, the neighbours, and anything else that came under the watchful eye of my binoculars. For another, they did not seem to object to my wearing jeans and a baggy pullover while all around where clad in suits that had never before seen the light of day and probably never would again. But the clincher was the place where they held the interview, which was at the college observatory at Mill Hill in North London. I was fascinated, I was amazed at the sheer size of the telescopes, and more importantly I was not the student who got on the wrong train at Kings Cross station and ended up on a non-stop to Luton. If he could have the courage to try for a place after starting off like that then so could I.

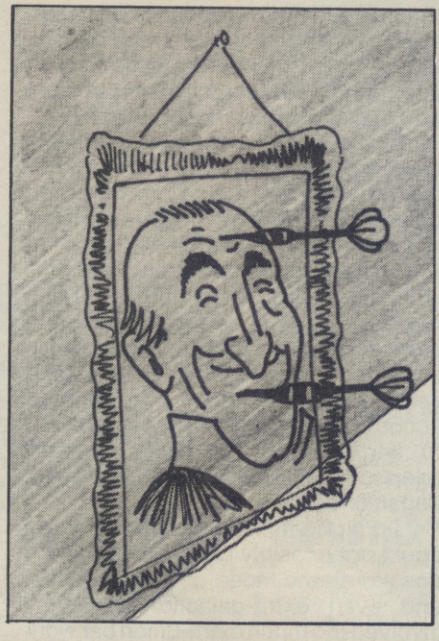
A few months later and I was there, along with some twenty nine other astronomy students, including the non-stop to Luton, who had eventually found his way back again. Before starting off the academic year we had all selected our courses for study, which had not really involved much of a choice at all. In the first year we had to study eight different subjects. Each subject carried a weight of half a unit, thus making up four units in all. Fail in two or more and you were in trouble, was the distinct impression that I got.

Fortunately for us first years most of the choices were made for us, and the only decision left to us was to choose between a half unit course in either pure mathematics or supplementary mathematics. I love mathematics like I love not breathing, but pure maths seemed to be the one to take. Little did I know what I was letting myself in for.

For the first week all went well, and it was exactly what I thought a degree course in astronomy should be. They were talking about things that I had observed, I was allowed (under supervision of course) to handle telescopes that were much mightier than anything I had looked at or through before, and I could seriously see myself making a living out of this.

Then the maths started.

Oh, it was not too bad at first, nothing that I couldn't cope with, but as the weeks went by I began to look at calculus as an old friend, rather than the mortal enemy that it once had been. On the plus side the practical astronomy and courses in things like basic astronomy, modern physics and astronomy, and so on, were all very interesting. We had courses in computer programming (the first I had ever done, this being long before the days of home computers everywhere), fiddling with lathes in workshops (where every male student with long hair was severely embarrassed by having to tie it up in a sort of protective scarf), engineering drawing (where my designs would have pleased Heath Robinson), and other subjects that I would not normally have encountered.

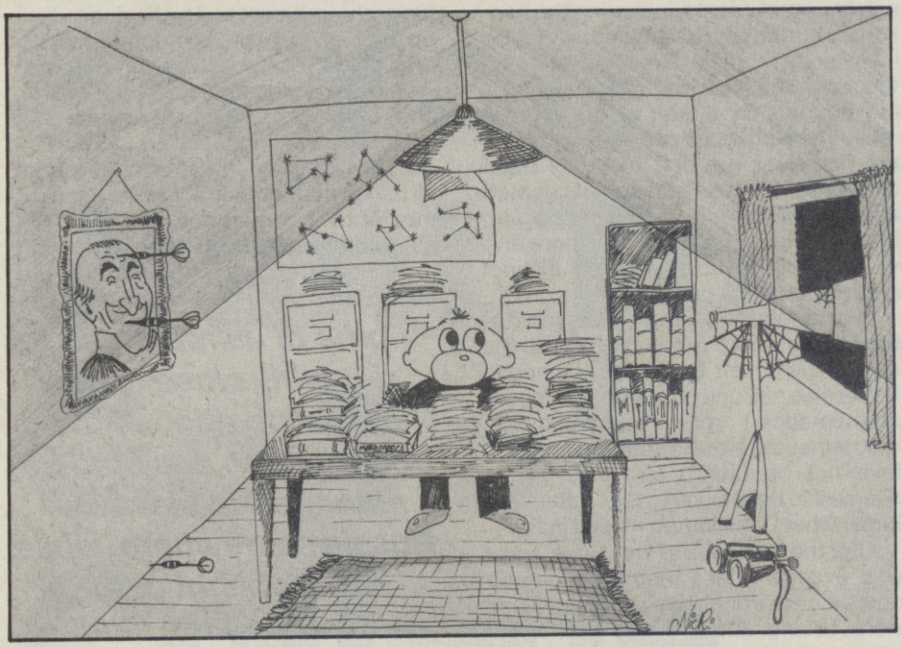


The first year, apart from a hatred of all things mathematical, had its share of moments. I remember one practical astronomy session quite well. By using a theodolite we had to make observations of known stars and fix the position of the observatory in terms of latitude and longitude. I can recall thinking that it would have been a lot easier just to look it up in an A to Z street map of London, but I was told that this was not really the point of the exercise. Some of us managed to get fairly close to the actual position of the observatory, one student managed to place it in Russia somewhere, while the highlight of the session was the student who had it as being nowhere on the planet earth. A definite boost for observational astronomy had it been true, but sadly not a boost for that particular student's career.

> ***"Some of us managed to get fairly close to the actual position of the observatory, one student managed to place it in Russia somewhere, while the highlight of the session was the student who had it as being nowhere on the planet earth."***

By virtue of trekking out to Mill Hill about once a week we naturally enough got to know the older students, research types most of them, who were supposed to be demonstrating these experiments to us. They in their turn passed on tales of earlier experiments that had gone wrong, including one that involved two students working together in an attempt to calibrate a few instruments. For some reason best known to college one student had to disappear into the wilderness (down the busy main road which runs beside the observatory, actually, since it is now only a teaching place rather than one that did any serious observational work) holding two torches, while the other peered at him through a small telescope. By holding the torches a known distance apart, and measuring that distance as seen through the 'scope, the idea was to get some idea of the accuracy of the instrument. As chance would have it it was quite a foggy night, and before too long the

continued from page 71



student with the torches had disappeared completely from view. Student with telescope was not impressed by this, and the search began. It ended up with both of them in a pub resolutely trying to conduct the experiment across a crowded bar, much to the amusement of the locals.

People tend to think of college days as being a succession of boozy evenings in student union bars, but the powers that be had picked the location of the observatory with care. There was not a pub for miles, and the two students mentioned above had done quite well to find one. They were heroes for weeks.

Back on the studying side the weeks went by, and I soon came to realise that astronomy was not quite the easy career that I had thought it to be. Apart from having to be a mathematical genius, there was all this work to do! Practical experiments to write up, homework (although it was never called that, of course: continuous assessment to them, homework by another other name to us) to do, tutorials to attend, and none of it at all like Porterhouse Blue. Well, not much anyway.

At the end of the first year we had the dreaded exams to sit, and to my amazement I managed to do quite well. On the financial front I had survived without running up an overdraft, due in part no doubt to staying in student accomodation for the entire year, something that I would recommend to any prospective student.

The second year was much the same as the first, only with fewer students involved owing to a little falling by the wayside after the exam results had been announced. On the other hand, for every two students we lost another one came back, having started the year before us and sat out the previous one owing to a misunderstanding with the examiners. There was very little practical astronomy in that second year, most of the practical work being confined to physics laboratories and working out how to remove the calculators that seemed welded to the benches. Didn't they trust us?

The second year would be, I imagine, the time when most students would discover that life as an astronomer was not for them. A lot of theoretical work, properties of gases, atomic physics, lectures on electronics, and the ever present computer work, and months would go by without stars and planets being mentioned at all.

At the end of that year the exams came around once more, and this time I did not do so well, mainly because I had decided that perhaps I was not cut out to be an astronomer after all. The brain was not equipped to cope with all this work being flung at it. In truth, I had also decided that I enjoyed spending the aforementioned boozy evenings in student union bars, and that, coupled with a year spent in rented accomodation, pushed my overdraft up to and beyond the limits normally tolerated by banks. The third year began under a cloud.

During that final year I found that I could not possibly care less about the cosmic abundances of the elements, and even extra-galactic astronomy involved too much extra-union bar work to make it interesting. The only saving graces in my third year were the extensive course in practical astronomy, two trips a week to the observatory this time and the project. This was, more or less, something of your own choosing, and I spent months worrying about the decay rate of Wolf-Rayet stars, producing vast reams of computer printout that could have decorated every room in the student house that I was living in (the only thing that saved me from the wrath of the bank manager, a man to be feared by all students: he who was power over the number of pints you can drink is a man to be reckoned with, especially when the bank was opposite the local pub).

That project I found fascinating, mainly because of the computing work involved in it, and at the same time I was enjoying the practical trips up to the observatory. The rest of the courses, another five of them, I found totally uninteresting, and all they did was disturb my day. Sadly I was forced to the realisation that I was not going to be an astronomer after all. It was a fine and most enjoyable hobby, it would not make a rewarding and interesting career.

The only drawback to the project was the fact that we had to give a talk on it, in front of the assembled powers of the Physics and Astronomy Department. Men who live in ivory towers should not throw students out of them, and the half hour of the talk was the most nerve-wracking thing that I had ever done. Fortunately for me I was the first one on, so that by eleven o'clock I was finished, and could quite happily disappear into alcoholic oblivion and rejoice in the suffering of fellow students waiting to take their turn. Apart from one or two appearances to act as moral support to friends, I was a free man!

And so my astronomy career ended before it had really begun. I enjoyed getting presented with my degree at the Royal Albert Hall, even if it did involve traipsing about in a gown. I even quite enjoyed the dinner after the degree results had been announced (third class honours in my case).

I left the world of astronomy and turned to computers, so the degree had not been a complete waste of time. I don't think any degree can be, and would urge everyone who has the possibility of going to university to do so. But, if you are thinking of making a career out of your hobby, think very, very carefully about it. I like astronomy as a casual pastime, I just don't have either the patience or the aptitude to turn it into anything else. You might have, and if you do I wish you the best of luck, but out of the thirty students that started the course in the same year that I did, I know of very few who are still actively involved in astronomy.

As a way of turning an interest into a job I personally cannot recommend it, although computing might be different from astronomy. But, as a way of spending three absorbing years and receiving a grant into the bargain, I can think of few better things to do than to get a degree. You might even end up writing for ***CCI***!

P.G.

continued on page 72

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Indiana Jones and the Last Crusade

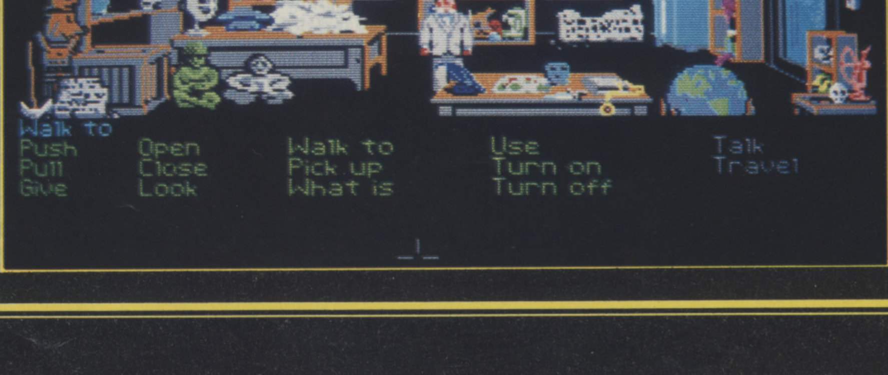
US Gold

The arch anti-adventurer Horgan likes a non-shoot 'em up? It must be worth reading about this Indy adventure...

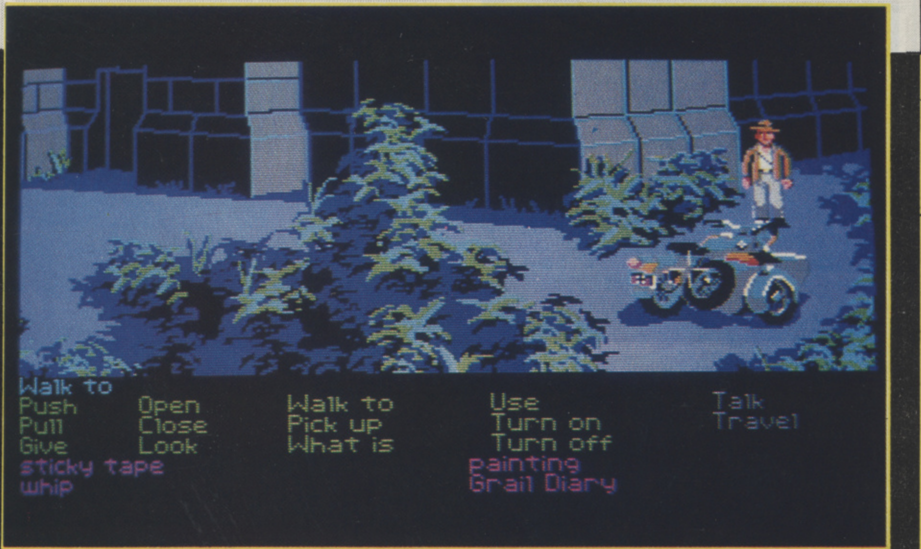
To such an extent, the latest Indy movie was brimming with both action and cunning brainwork on the part of Indy, that US Gold decided to write two completely different games around the film's plot. The arcade style game was programmed in the UK, and released a few months ago. It was a mildly playable platform game, but failed to convey the movie's swash-buckling action and tongue-in-cheek humour. The adventure game, on the other hand, was programmed in the US by Lucasfilm's own development house. Following classics such as The Eidolon, Rescue on Fractalus, and Maniac Mansion, I was rather looking forward to it. I wasn't disappointed.

If you've seen the film, you'll be familiar with the storyline, although the game deliberately takes its own course from time to time. A brief description of the plot is included with the game for anyone who's not seen the film, which doesn't give out any clues, but gives the player some idea of what's going on. It's set in the year 1938, as the power of the Nazis is beginning to snowball. Indy's dad has gone missing whilst hunting the holy grail. The grail's fabled eternal life-giving powers have attracted the attention of Hitler, and Indy suspects that has something to do with his father's disappearance. Indy's goal is therefore twofold: to find his dad, and track down the grail.

Rather than use a conventional adventure game format, Lucasfilm have once again employed their unique mouse-driven combination of

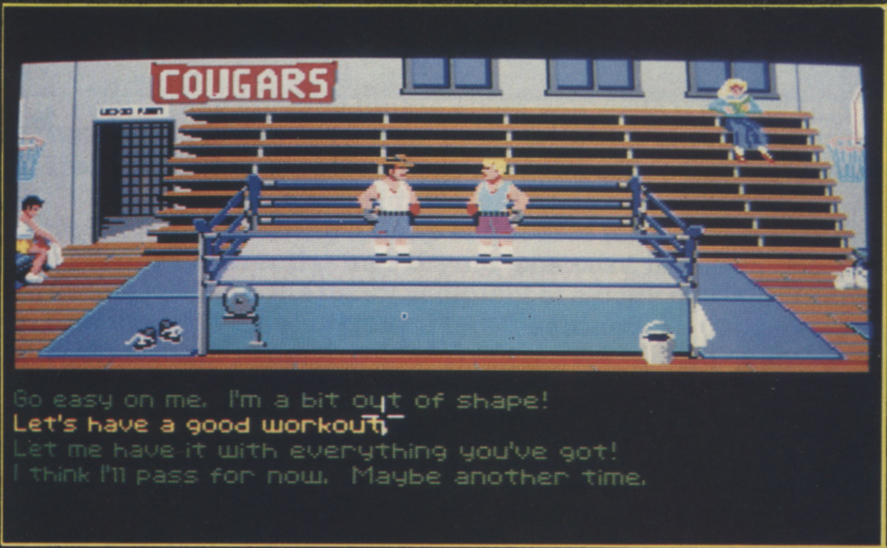


That won't hold them for long. I'd better not go back in there.



animated graphics and speedy text entry. The top two thirds of the screen are filled with graphics of the current location, along with any characters and objects. Beneath that are the available commands, selected by a mouse click. This small vocabulary could limit the game, but most commands are very versatile, and it's rare that you'll want for an extension to the list. With many graphic adventures, knowing what is relevant and what is window dressing can be a problem. Here, selecting the "What is" command and running the cursor over the picture will point out anything the program recognises as an object.

There's plenty of opportunity for conversation. "Talk" is added to the vocabulary where appropriate. Conversations are carried out by selecting multiple-choice phrases. As with the rest of the game, these are a cinch to operate, reminisent of certain scenes from Rocket Ranger. Smooth talking can get you out of just about any encounter with a hostile character, but if your wit fails you, you've always got your fists. Some of the weedier enemies can be knocked out with a single punch, but most will give you a run for your money. The fight sequences are keyboard controlled, and a little slow to react, but balance up all that brainwork.



Go easy on me. I'm a bit out of shape!
Let's have a good workout.
Let me have it with everything you've got!
I think I'll pass for now. Maybe another time.

A friendly adventure system alone doesn't make a good game, but fortunately the plot and puzzles are well up to scratch. Your search for your dad and the grail leads you all over the world, from the good old U.S.A., to Venice, Austria and finally the Middle East. This ensures a huge variety of locations, resulting in a diverse string of problems. Compared to some of the posers which present themselves later in the game, your initial trouble of escaping a class of archeology students is laughably trivial. Adventures are not usually my thing (I think the last I played was Zak Makraken), but I found Indy no trouble to get to grips with, which probably means it's quite easy for an adventure. The main reason for this is its no-messing approach. You'll find it impossible to die in the opening stages, and if you're barking up the wrong tree, rather than let you set out on a wild goose chase, the program prefers to steer you back onto the right course, without giving too much away.

Indy is a great improvent over Zak and Maniac Mansion when it comes to graphics. The characters do have character (unlike the stick men of its forerunners), and are realistically animated. Indy himself goes through a number of costume changes, and each action he performs is properly animated. When he pulls a lever, you see him reach out and tug it. Similarly, direct him down a slippery slope, and he'll lose his footing, ending up in an undignified heap at the bottom. The backgrounds are also intricately detailed at times. Indy's study is full of historical relics from his archeological exploits, many of which are recognised by the program.

Best of all, the solutions to the problems are all logical. None of this shot in the dark spell casting business, just down to earth problem solving. If a situation does ever present you with a brick wall and a seemingly useless clue, consulting your dad's grail diary usually clears it up. As the goals are generally obvious, and the program helpful, experienced adventurers will probably not have much trouble in completing it. However, there's no law that says you have to know Anita Sinclair's vital statistics to play an adventure game, and this is just the ticket for fringe adventurers. It's witty, involving, original, with some great sounds and graphics into the bargain, and not a balrog or cleric in sight! What more could you ask?

T.H.

Graphics: 82%
Sound: 70%
Playability: 91%
Overall: 90%
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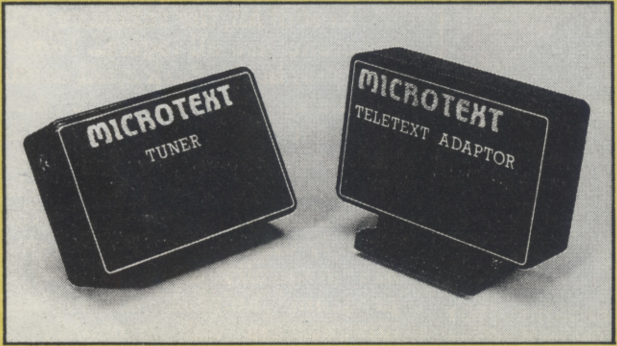

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Sure enough, good old US Gold have come up with the goods once again, so soon after generously donating a heap of goodies for their Indy action game. Answer the following questions correctly, and if your postcard is one of the first fifteen to take Mr Horgan's fancy, you'll be the lucky recipient of a copy of the brilliant Indy graphic adventure game (Amiga version only), and a trend-setting Last Crusade T-Shirt! There's also a T-shirt in it for the runners up.

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Programming Techniques

Getting Faster By The Second

Peter Gerrard looks at ways to make your programs run faster and faster and...

Last time around we looked at ways of shrinking your programs so that they occupied less memory, and that is just one way in which program execution can be speeded up. Smaller programs run faster, as they have less memory overheads to worry about, but there are many other ways of improving the speed at which yor programs operate. But why should you want to do that? What are the advantages in having a program run a couple of seconds faster than it would otherwise have done? Let us consider the adventure program.

Typically, here, the user inputs a command and waits for the program to interpret it. The user might want to move somewhere, examine something, pick up a carelessly discarded treasure, or whatever, but they always have to wait for the computer to rumble its way through the program code and come back with some sort of answer. If this only takes a few seconds it is not so bad, but anything longer than that and the user is soon going to lose patience with the program and go on to somebody else's adventure. If a program that has been speeded up can, on average, reply to an input some five seconds faster than it might otherwise have done, after 120 inputs you will have saved ten minutes. That, when you are ploughing your way through a lengthy adventure, can soon mount up to a very considerable saving in time. What is more, it keeps the user playing YOUR adventure rather than that of somebody else.

Needless to say there are programs other than adventures that will benefit from this sort of increase in speed. A database scanning through hundreds of records, or sorting records into order, will not be used for long if it runs at a painfully slow speed. But given a reasonable response time people will keep coming back for more. I am sure you can think of plenty of other reasons why it would be a good idea to have your programs running as fast as possible.

And how, you may be wondering, do we measure any sort of increase in speed? There are a number of ways of testing the speed at which a program is operating, and since we do not want to be sitting over the 64 with a stop watch all the time we might as well get the computer to test itself.

One of the easiest ways of making virtually any program run faster is to use integer numeric variables rather than ordinary ones. You are probably well aware that integer variables carry the label % after their name, so that you might have A%=12 rather than A=12. This does, of course, restrict you to integer arithmetic only, but if that is all you intend using then all well and good. If you were writing a program that involved the use of sums of money, you could still have everything in integer arithmetic then just divide any answers that need to be in pence by one hundred to get the final sum. But does it really make that much of a difference? We shall soon find out. Type in and run the following program:

```
100 A=TI
110 FOR I=1 TO 10000
120     X=12:Y=24:Z=Y/X:X=Y/Z:Y=
X*Z
130 NEXT I
140 PRINT TI-A"JIFFIES USED"
```

Now try altering line 120 so that only integer variables are used, that is, ones like X%, Y% and Z%, making sure that you change all of them. Run the program again, and see what the number of jiffies used comes to this time. In this sort of short example there obviously is not going to be a huge difference, but even from this kind of thing you can probably readily appreciate the advantages to be gained by using integer variables (if possible) throughout the whole of a longer program. To speed things up further, could you not use FOR I%= etc. and have NEXT I% at the end? Try it and see!

Using this timing technique it is possible to find out how long it takes for various commands to be executed, and it might be worth your while drawing up a table of the ones that are most commonly encountered and seeing how long it takes for them to operate. You never know, you might manage to make some further time savings that way.

There are numerous other ways of speeding up programs apart from using integer variables. To stick to our adventure example, you should put the most commonly encountered verbs and nouns before the rarer ones, so that program execution for those will be fast and thus make the rest of the program seem fast as well. For example, in traditional adventures the user will probably be moving around quite a lot of the time, so the verb Go, or the movement directions north, south, east and west (and better still, n, s, e and w) should come at the front of any list of verbs so that the program can recognise them straightaway and act on them. Then come other such common verbs as examine, look, get, drop and so on, preferably with abbreviations for the most frequently used ones. There is little point in putting obscure things at the front of your code, situations that might at most only be required a couple of times in the program, because then the program will still

continued on page 80

continued from page 79

have to go through them every time a verb is being analysed and this will, of course, take time.

This sort of thing only really applies to adventure programs though, but the rule can be extended to cover many further situations and leads us neatly into the verbal battlefield that often surrounds the words "structured programming". I am no great believer in flowcharting everything when writing a program, but it cn have its advantages, and even I have been known to make diagrams on the back of envelopes before getting down to tackle a program of any great length. A collection of often used subroutines at the back end of a program will help the flow (and speed) of any lengthy program, and with a little bit of forethought we can usually manage to eliminate the nest of IF ... THEN vipers that formed the bulk of the first article in this series. There is nothing that can slow a program down more than having to trace its weary way through a horde of IFs, THENs and GOTOs, when a few notes before starting out would have told us how to avoid them. There is no need to eliminate them entirely, of course, because there will always be times when we do need to know IF something is true and whether we THEN have to GOTO anywhere to take care of it, but the fewer the better, at least as far as speed of program is concerned.

Back to variables and their use in terms of making a program operate at a faster lick. Although it is nice to have identifying variable names such as LABEL or NAME there really is not much point, since the 64 only recognises the first two letters anyway, and having long names takes up memory which usually means taking up speed as well. So here it would be better to stick to LA and NA. But what you can do with variables is to make them equal to any commonly occuring numbers within your programs. The variable PI, for instance, if made equal to (roughly, I know) 3.14159, will make things run much smoother if you can then use equations like CI= 2*PI*RA, where CI would stand for circumference and RA would be equal to the radius of our imaginary circle. It's much faster than putting 3.14159 all the time.

A lot of what was said last time about reducing memory overheads also applies here as well (ON VERB GOTO instead of a host of not so golden IF ... THEN statements, and so on) but nowhere will the increase in speed be more dramatically realised than by making the transition from Basic to machine code. Now some might say that this is not fair, and that they haven't really got to grips with Basic yet, never mind machine code, but you do not actually have to know anything about machine code in order to use routines that are published in magazines such as this, for instance. As long as the author of the routine tells you how it works and how you might use it in your own programs (the Basic Aid program in the October 1989 issue of CCI is a splendid example) then there is no need for you to know even the slightest thing about accumulators, x registers and the like. But you could always learn!

However, if you do not want to learn, there are such things as compilers available for the 64, but check very carefully before you go out and buy one. Make sure that it is 100 percent compatible with Commodore 64 Basic, because not every compiler is true to the machine. Assuming you find your compatible compiler you could then use it to compile your master copy, making sure that you do have a backup in case of disaster, because once a program has been compiled you cannot then de-compile it. So what do compilers do? Roughly, they convert your Basic program into a sort of pseudo-machine code that can be run on the 64. This means that short programs tend to get longer, as they need a " translator" part tacked on, but with longer programs the compilation process reduces them in size, so even with the "translator" they still end up as shorter than when they started. And they run much faster! More next time.

P.G.

Alternities

by Michael P.Kube-McDowell (Sphere Books £3.99)

Imagine not one but four, or even more, parallel universes where life in each one goes on unknown to all the others - except one. This is the concept in Michael P.Kube-McDowell's 'Alternities'.

The Home universe has discovered a 'gate', a way to enter into the other universes, and proceeds to smuggle spies, called 'runners', into the alternities. Not only does the Home alternity want to find out if any of the others have made discoveries that they do not yet have, but the President of the USA is intent on teaching the USSR a lesson - the cold war is still very much in existence in the Home alternity - and then, realising that it might result in a global war, decides to decamp into Alternity Blue and take it over, too.

All other alternities are codenamed in colours by Home and it appears that Blue is the one nearest in culture to the Home universe. So President Peter Robinson, after forcing a confrontation with the Russians by 'nuking' one of their submarines, makes plans to go through the 'gate' to Blue, with various trusted personnel, and make his home there.

The main character in this story is Rayne Wallace, gate-runner spy, - albeit a reluctant one - husband and father, whose marriage is rapdily foundering on the rocks of secrecy, for he is not allowed to reveal to his long-suffering wife, Ruthann, what it is that keeps him away from home for so long, so often. Being a runner is not, though, the sole reason. In the Blue Alternity Rayne has discovered the alter ego of a girl he once loved and lost when at Home and he is torn between his desire for her and his still inherent love for his wife and his small daughter.

There are also several sub-plots, including one concerning a sadistic friend of the President that I found quite unpleasant. Senator Endicott is a man who gets his kicks by kidnapping and torturing young girls, but I really don't think that the intimate details of his nasty way with women needed to be described quite so specifically. Perhaps Kube-McDowell should learn that to insinuate fires the imagination much more vividly than a plethora of graphic detail.

Michael P.Kube-McDowell, (there's a name that it is going to be hard to forget!), is a writer new to me - and, perhaps not only to me, for I failed to find him listed in the 'SF' bible, the 'Encyclopedia of SF', either - but he has a lively and inventive way with words.

I found 'Alternities' interesting but confusing. There is so much jumping about from one universe to another that, at the beginning, I often had to look back at the headings to find out which one I was reading about and it wasn't until about a third of the way through that the story began to grip.

There were also a few loose ends left at the conclusion but that may be, I am inclined to think, because the author intends to write a sequel. If he does I hope that, next time, he will restrain his urge to try and cram too much into one novel, which I think is the chief fault of 'Alternities'.

Nevertheless, I think we shall be hearing a lot more from this prmising new SF find.

D.M.

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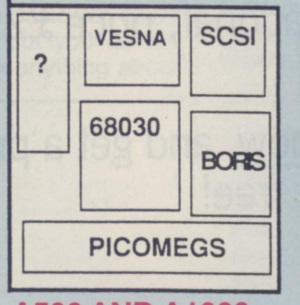

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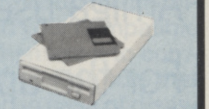

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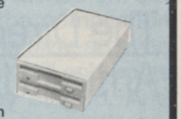

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S–ENTRY

C64/128

BASIC COMMANDS

S–ENTRY intercepts several vectors in the operating system, and because of this the normal basic commands are not available ... don't worry ... you can still use them by prefixing the command with the @ symbol, so SAVE would become @SAVE, etc.

NOTE: do not use any DOS wedge, or you will confuse S–ENTRY.

S–ENTRY DISABLE

Before you run any programs that you have entered, S–ENTRY MUST BE DISABLED. Enter an ! on its own and S–ENTRY will be removed from memory and the normal operating system restored. REMEMBER ALWAYS SAVE A PROGRAM BEFORE YOU RUN IT!

MISSING LINES

In order to provide you with a flexible system, S–ENTRY only checks on a line by line basis. So if you miss out line 540 say, S–ENTRY will NOT report an error.

This may sound odd, but it does allow you to enter part of the program, then save it and come back to it at a later date. This is also helpful if you and several friends are splitting up the job of entering a large program, each person will be able to say that what has been entered is correct.

To make sure that you have the entire program entered correctly, Enter type '&' symbol on its own. S–ENTRY wil then calculate the S–ENTRY code for the program in memory, you can compare this with the final S–ENTRY code printed at the end of the listing.

ADVANCED USE

If you think you are good enough not to use the S–ENTRY system, you can simply enter the normal basic lines after the S–ENTRY code. But what if you get it wrong? Well S–ENTRY has a command that will produce a summary of the S–ENTRY code and the line number ion memory; you can then compare this with the published S–ENTRY codes and thus track down the problem. This command is «–LIST; you can pause the list by using the Shift/Shift Lock keys. The command will also accept a line numbner range, i.e. 100-200 or 200- etc.

The ONLY difference that S–ENTRY makes to the published listing is the addition of the four character code before the line number, and the addition of the final S–ENTRY code at end of the listing.

S–ENTRY COMMAND SUMMARY

&	Calculates the S–ENTRY code for the entire program in memory.
@	Prefix to a basic command ie @DSAVE or @LOAD
!	Remove S–ENTRY
«–LIST	Display S–ENTRY code summary, use shift/shift lock to pause.

YOU MUST

1. Use EXACTLY the same line numbers.
2. Enter the program exactly as printed, including all REMs.
3. Use EXACTLY the same commands, FULL command names MUST be used, ie '?' cannot be used instead of PRINT.
4. Remember to convert the easy enter codes ie [SP9] means type 9 spaces.
5. Type anything between " " (quotes) EXACTLY as published.

```
100 REM
110 REM********************************
120 REM*                              *
130 REM*         CCI S-ENTRY          *
140 REM*                              *
150 REM*      FOR THE C64 & C128      *
160 REM*                              *
170 REM*(C)1989,A.ESKELSON & G.CATTLEY*
180 REM*                              *
190 REM********************************
200 REM
210 M1=256*PEEK(179)+PEEK(178):C8=65281:C9=C8-2:FA=250:FB=251:FC=252
220 POKE C8,00:REM IF 128 SET BANK 0
230 MC=M1+9:CC=0:FOR I=0 TO 61:READ ZZ
240 CC=CC+ZZ:POKE M1+I,ZZ:NEXT I
250 REM DATA FOR CRC
260 DATA 169,000,133,250,133,251,133,252,096,169,000,133,252,162,008,165
270 DATA 250,042,038,253,042,042,042,042,042,069,253,133,253,165,250,069
280 DATA 253,133,253,165,251,042,042,042,069,253,133,253,038,252,042,069
290 DATA 253,106,038,251,038,250,202,208,214,166,251,165,250,096
300 IF CC<>9069 THEN PRINT"ERROR IN CHECKSUM DATA":STOP
310 REM
320 REM TEST FOR C128/C64
330 IF M1=2816 THEN C64=2:SA=3072:GOTO 360
340 IF M1=828 THEN C64=1:SA=49152:GOTO 360
350 PRINT"ERROR NOT C64 OR C128 ?":STOP
360 READ TC:EQ=0:EA=SA:SYS M1
370 HB=INT(SA/256):LB=0
380 REM START OF LOOP
390 READ DA$:REM READ THE DATA
400 IF DA$="-9999" THEN 480:REM FINISHED ALL THE DATA
410 DA=VAL(DA$):PRINTSA;CHR$(145)
420 IF LEN(DA$)<>3 THEN 450
430 POKE SA,DA:SA=SA+1
440 POKE MC+1,DA:SYS MC:GOTO 390
450 A%=PEEK(FA):X%=PEEK(FB):CK=A%*256+X%
460 IF CK<>VAL(DA$) THEN EQ=1:GOTO 480
470 GOTO 390
480 IF EQ OR (CK<>TC) THEN 510
490 POKE FA,LB:POKE FB,HB:POKE FC,C64:SYS EA
500 PRINTCHR$(147);"S-ENTRY ACTIVE. TYPE '@NEW' TO CLEAR LOADER":END
510 PRINT"LINE/DATA ERROR IN LINE";
520 PRINT PEEK(66)*256+PEEK(65):END
530 DATA 44232
540 DATA 024,165,250,105,028,133,176,165,251,105,002,133,177,169,000,170,48900
550 DATA 168,024,177,176,133,254,200,177,176,101,251,133,255,200,177,176,00903
560 DATA 201,255,240,008,024,101,251,129,254,200,208,229,024,165,250,105,18744
570 DATA 112,133,176,165,251,105,002,133,177,024,165,250,105,126,133,254,17887
580 DATA 165,251,105,000,133,255,162,000,164,252,177,176,072,161,176,240,44466
590 DATA 017,168,104,145,254,165,176,024,105,003,133,176,144,002,230,177,32098
600 DATA 208,230,104,169,000,141,005,003,169,126,141,004,003,169,000,133,49661
610 DATA 252,173,038,003,141,152,002,173,039,003,141,153,002,096,160,000,49456
620 DATA 132,251,132,250,132,180,132,254,132,253,185,000,002,201,032,208,52892
630 DATA 003,200,208,246,201,095,208,017,072,169,171,141,038,003,169,002,22812
640 DATA 141,039,003,032,154,002,104,208,053,072,173,152,002,141,038,003,55274
650 DATA 173,153,002,141,039,003,104,201,064,240,035,201,033,240,013,201,41233
660 DATA 038,208,033,076,068,001,173,141,002,208,251,096,169,067,141,005,20351
670 DATA 003,169,013,141,004,003,169,000,153,000,002,076,013,067,032,128,63881
680 DATA 003,024,144,247,165,252,240,007,169,000,133,252,024,144,236,132,15406
690 DATA 252,152,024,105,004,168,185,000,002,240,007,032,211,001,200,208,05629
700 DATA 245,000,164,252,162,001,185,000,002,072,169,032,153,000,002,104,21893
710 DATA 056,233,065,024,010,010,010,010,133,252,200,185,000,002,072,169,54075
720 DATA 032,153,000,002,104,056,233,065,041,015,005,252,213,250,208,011,11281
730 DATA 200,202,016,210,169,255,133,252,076,209,077,169,000,133,252,162,54224
740 DATA 022,108,000,003,162,001,181,045,149,176,202,016,249,141,001,255,56924
750 DATA 160,000,132,251,132,250,132,180,132,254,132,253,160,001,177,176,45691
760 DATA 240,040,200,177,176,032,211,001,200,177,176,032,211,001,200,177,58968
770 DATA 176,240,007,032,211,001,200,016,246,000,160,000,132,254,177,176,22791
780 DATA 170,200,177,176,134,176,133,177,208,210,160,000,140,000,255,185,63767
790 DATA 154,001,240,022,032,210,255,200,208,245,083,045,069,078,084,082,26008
800 DATA 089,032,067,079,068,069,032,061,032,000,162,001,181,250,072,041,42873
810 DATA 240,074,074,074,074,024,105,065,032,210,255,104,041,015,024,105,62214
820 DATA 065,032,210,255,202,016,229,141,003,255,169,000,141,000,002,076,51028
830 DATA 222,000,096,201,034,208,008,072,165,254,073,255,133,254,104,201,08627
840 DATA 032,208,004,036,254,016,052,133,180,169,001,072,165,251,041,128,08832
850 DATA 042,038,253,165,251,041,008,106,106,106,069,253,133,253,165,251,26391
860 DATA 069,253,133,253,165,250,042,042,042,069,253,133,253,038,180,042,59214
870 DATA 069,253,106,038,250,038,251,104,010,144,208,096,100,000,000,197,16654
880 DATA 000,001,253,000,001,103,001,001,109,001,001,117,001,001,145,001,10659
890 DATA 001,209,001,000,118,000,002,124,000,002,159,000,002,165,000,002,52822
900 DATA 172,000,002,178,000,002,211,002,002,001,003,002,010,003,002,019,14849
910 DATA 003,002,035,003,002,050,003,002,028,003,002,231,002,002,222,002,52909
920 DATA 001,047,003,002,194,002,002,200,002,002,042,003,000,255,255,255,04528
930 DATA 079,165,067,084,124,013,094,124,013,095,165,067,201,043,045,097,06351
940 DATA 115,128,098,000,003,187,138,209,188,164,077,073,141,211,074,002,22835
950 DATA 000,000,064,064,064,064,064,032,000,000,160,000,132,251,132,250,37171
960 DATA 132,180,132,254,132,253,132,177,132,176,096,134,182,132,181,201,46369
970 DATA 013,240,054,166,177,208,037,201,058,176,038,201,046,208,016,072,22106
980 DATA 173,152,002,141,038,003,173,153,002,141,039,003,104,208,018,164,50064
990 DATA 176,153,146,002,230,176,201,032,208,002,230,177,032,211,001,169,15787
1000 DATA 001,166,182,164,181,108,152,002,096,164,177,240,244,169,002,072,30286
1010 DATA 168,136,185,250,000,072,041,240,074,074,074,074,024,105,065,032,48296
1020 DATA 225,002,104,041,015,024,105,065,032,225,002,104,074,144,224,169,27482
1030 DATA 061,032,225,002,169,000,133,176,164,176,185,146,002,201,032,240,17276
1040 DATA 007,032,225,002,230,176,016,240,032,198,000,169,013,032,154,002,25087
1050 DATA 076,225,002,255,44232,-9999
```

CONTINUED FROM LAST MONTH

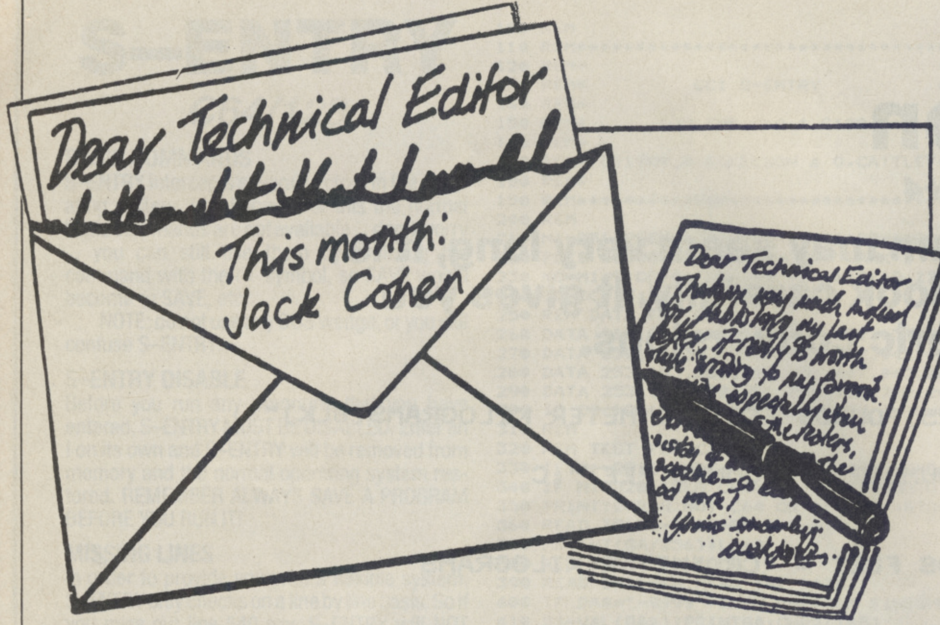
Conversion

Cpl D. Baillie C64, C128, +4

Although the program may seem very long, it is easy to enter if you look carefully. It gives you many types of numeric conversions.

```
NBLL 7150 PRINT"[CLR]"
JHIL 7160 PRINT"[RED][CR5]POUNDS FEET TO METER KILOGRAMS[BLK]"
IIMK 7170 PRINT:PRINT
FPEC 7180 INPUT" ENTER NUMBER OF POUNDS FEET";C
JILC 7190 PRINT:PRINT
CICM 7200 CC=C*0.13826
EBNL 7210 PRINT C "POUNDS FEET = "CC "METER KILOGRAMS"
KKAC 7220 PRINT:PRINT
EOIJ 7230 D1$=""
LANF 7240 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
GJEI 7250 PRINT:PRINT" 1-ANOTHER CONVERSION"
CAGA 7260 PRINT" 2-RETURN TO 'LOAD' MENU"
JNMC 7270 PRINT" 3-RETURN TO 'MAIN' MENU"
FOLC 7280 GET D1$:IF D1$="" THEN 7280
EJCF 7290 IF D1$ <"1" OR D1$ >"3" THEN7280
FJNA 7300 IF D1$="1" THEN 7150
BCHI 7310 IF D1$="2" THEN 6460
IDNM 7320 IF D1$="3" THEN 100
BPEA 7330 PRINT"[CLR]"
IBPM 7340 PRINT"[RED][CR13]PRESSURE[BLK]"
PAPB 7350 PRINT:PRINT
LMDE 7360 PRINT" WHICH CONVERSION DO YOU WANT?"
CNFE 7370 PRINT:PRINT
HLOK 7380 PRINT" 1-KGRMS SQ C/MTR - POUNDS SQ INCH"
FKON 7390 PRINT" 2-BAR - POUNDS SQ INCH"
LKJO 7400 PRINT" 3-ATMOSPHERE - POUNDS SQ INCH
DAHC 7410 PRINT
LMJB 7420 PRINT" 4-POUNDS SQ INCH - KGRMS SQ C/MTR
PBDJ 7430 PRINT" 5-POUNDS SQ INCH - BAR
DBLJ 7440 PRINT" 6-POUNDS SQ INCH - ATMOSPHERE
MMJM 7450 PRINT:PRINT
OEMK 7460 B$=""
MNBC 7470 PRINT" SELECT ONE BY PRESSING THE APPROPRIATE[SP2]NUMBER (1-6)";B$
GLCE 7480 GET B$: IF B$="" THEN 7480
BKGO 7490 IF B$ <"1" OR B$>"6" THEN 7480
AMCM 7500 ON VAL (B$) GOTO 7510,7690,7870,8050,8230,8410
OCIE 7510 PRINT"[CLR]"
CIMJ 7520 PRINT"[RED][CR3]KGRMS SQ C/MTR TO POUNDS SQ INCH[BLK]"
HILN 7530 PRINT:PRINT
HPMN 7540 INPUT" ENTER NUMBER OF KGRMS SQ C/MTR";C
BOFD 7550 PRINT:PRINT
OPJD 7560 CC =C *14.22334
HOFL 7570 PRINT C "KGRMS SQ C/MTR = "CC "POUND SQ INCH"
DNFM 7580 PRINT:PRINT
GFHK 7590 D1$=""
BFBJ 7600 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
NAEN 7610 PRINT:PRINT" 1-ANOTHER CONVERSION"
IDOA 7620 PRINT" 2-RETURN TO 'PRESSURE' MENU"
NIII 7630 PRINT" 3-RETURN TO 'MAIN' MENU"
DIBF 7640 GET D1$:IF D1$="" THEN 7640
IMNF 7650 IF D1$ <"1" OR D1$ >"3" THEN7640
```

Continued next month



Dear Technical Editor,

Please can you help me? I have just had a new tape head fitted to my C2N cassette deck for my C64 and I just cannot get the setting right, so now I cannot load any games.

Can you please tell me if there is any software or listing that I can use to help me set the new head?

I hope that you can help me.

Best wishes,

Helpless Lee, Lancashire

Dear Helpless Lee,

Tape head alignment software is available. Why don't you try our advertisers or Supersoft on 01-861-1166.

If your new tape head was fitted by an experienced repairer then the alignment check should have been carried by the repairer. If this is the case then first contact the repairer.

Dear Technical Editor,

Two years ago my father bought an Oceanic Disc Drive. With it cam a Freeze Machine. The Freeze Machine is almost useless. The only thing that works at all is the "Freeze" and this only works with certain games.

Two years later we bought a KCS Power Cartridge. The Power Cartridge functions all work except that some programs will not load with the Power Cartridge in. Some of these programs have been mentioned in "Horgans Hints" using a reset poke. Neither of the two cartridges could do anything (we had the Freeze Machine renewed twice). Please could you explain this.

Yours sincerely,

James Windmill, Gloucs.

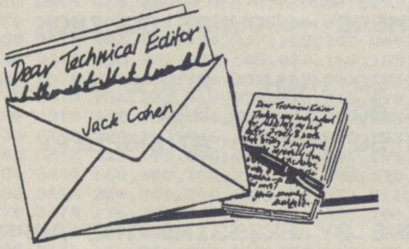
Dear James,

Some programs are protected in such a way that they check for the presence of code from $C000, or checking for CBM autoboot code in the same area. This type of program will not continue with the load once a cartridge is detected.

What happens is that some code is loaded and executed and it will not load the main code in the above circumstances.

The code will perhaps also check the disk ROM and find a slight difference from a 1541 and the abort loading.

Most software creators will not use these methods any longer and they rely on the law to deter wouldbe pirates. I suggest that you check this when looking at software and refuse to buy the older kind when you have a non-standard disk drive.



Dear Technical Editor,

Can you or any one out there help me? I have a fault with my GEOS system, operating on a C64.

GEOS Version 1.2

On booting the system using disk one, the system boots up to show the control window, then a window apperas with the following,

BOOT DISC ERROR 1.23
DRIVE A TRACK 0B
SECTOR 0B
HEX
at the bottom O K

I point the pointer to O K then press, the system then proceeds to reboot showing the same error message. If I point and press again, nothing. I can then exit the boot program by going to the disk command and close the disk. I can then load my next disk.

New fault, at the bottom of the page that I am writing on GEOS if the letters are CAPITALS the error message SYSTEM ERROR NEAR $2024 appears. These faults are recent.

I contacted Microprose Software by phone, and they tell me that they no longer are agents for GEOS and to contact a firm called Microdealer on 0908 374000, guess what, they are no longer agents for GEOS, and have no idea who is. Have you or any of your readers come across these faults before, or can anybody tell me who I can get information from.

I see from your magazine that a firm calling itself F S S L is selling GEOS, is it possible they would know of anybody, as I see they are selling GEOS V2.0.

Please find a stamped addressed envelope for hopefully an answer if this letter is not published.

Yours faithfully,

E.G. Walton, Powys

Dear E.G. Walton,

I understand that the GEOS system worked correctly for some time, and then gradually developed some faults. It may be that your disk has gone slightly out of adjustment and it is, perhaps, getting worse.

Check this by loading standard software (not your own) without using GEOS.

If your disk proves to be in alignment then disk one has corrupted slightly.

In this case you may be able to obtain an exchange diskette, with a small payment, from FSSL.

Dear Technical Editor,

I am writing to see if you could help me, I bought a Commodore VIC 20 starters pack for my little girls aged 8 some years ago. My wife and I separated last year, she went to stay with her mother. We decided she could take the computer to her mothers, my wife died 6 weeks ago in a car accident, I now have my daughter staying with me, and she brought her VIC 20 with her, but we can't find the instructions for it. If I have to pay for Postage thats OK as I want to help my daughter get into computers now, as it will benefit her in years to come (ie Jobs, etc.) Thankyou for reading this letter,

Hope you can help,

Mr L.Turnbull, Scotland

Dear L. Turnbull,

You have not mentioned which type of instructions are needed.

Is it to program in BASIC on the VIC 20? Or just simple instructions on how to load a cassette.

These instructions are usually on the cassette tape box. However if the

BASIC language instructions are required then I suggest that you first try your local public library for suitable simple books.

If you cannot obtain one on the VIC 20, or a CBM BASIC (64 and similar types) then one on a common BASIC will do.

Some commands will not work but most will, at least enough to get your daughter started.

Dear Technical Editor,

Please find enclosed a program I typed in from the Commodore magazine about two dozen times. And every time it comes up with syntax error in line 60 which I cannot find.

As I am a retired old age pensioner I would be very greatful for you help. The program is supposed to draw a pencil on the screen, thanking you for your cooperation,

I remain
Yours sincerely,

Mr. F.J. Hughes, Lincs.

Dear F.J. Hughes,

The syntax error in line 60 is that you should put an operator (,/,+.-) between PI and 180. Check the original listing for the correct one.

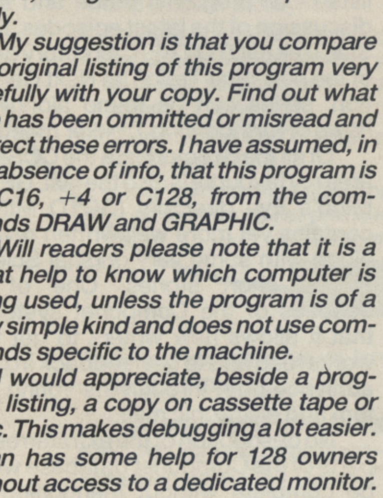
If a misprint then try different ones until you get the predicted result. Other errors that will prevent the program running correctly are:- GRAPHICl1,1 should be GRAPHIC 1,1 in line 90.

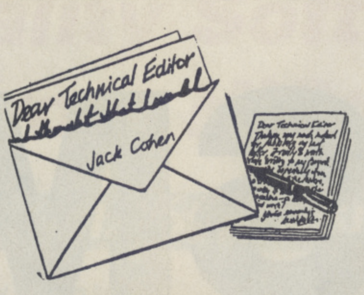
The required closing bracket in line 90 after Y(Z,N has been left out. Other points to note are that 'V' is defined in line 10 but is never used, at least in the copy you sent. The program has no exit routine, but goes around a loop indefinitely.

My suggestion is that you compare the original listing of this program very carefully with your copy. Find out what else has been ommitted or misread and correct these errors. I have assumed, in the absence of info, that this program is for C16, +4 or C128, from the commands DRAW and GRAPHIC.

Will readers please note that it is a great help to know which computer is being used, unless the program is of a very simple kind and does not use commands specific to the machine.

I would appreciate, beside a program listing, a copy on cassette tape or disc. This makes debugging a lot easier. Brian has some help for 128 owners without access to a dedicated monitor.





Dear Technical Editor,

I have a Commodore 64 with an OC-118N Disk Drive, and I am having great trouble programming relative files.

I am wanting to store a file of names and addresses for a business I am starting and this problem is holding up no end.

The problem lies in the fact that I cannot save fields within a record, each field going into a new disk record.

For example, field 1 of program record 1 (F1 of PR1) goes into disk record 1 (DR1), F2 of PR1 into DR2, F3 into DR3 etc. When I come to PR2, F1 goes into DR2 overwriting F2 of PR1, F2 of PR2 into DR3 overwrites F3 of PR1, etc. F1 of PR3 overwrites F2 of PR2 etc, etc. At the end of the program what is on the disk is a whole series of the first fields of all the records except the last which is complete.

What is wrong with the instruction:- PRINT#15,"P" CHR$(2) CHR$(I1) CHR$(I2) CHR$(X) where I1=(rec. no. − (256*I2)), I2=INT(rec no./256) and X is the accumaltive length of all the filds already saved to the file?

I do hope you can help me,
Yous desperately,

F.K. Patterson

Dear F.K. Patterson,

The way that you have dealt with the pointer CHR$(X) is wrong. This pointer allows division of a RECORD into several fields. Normally the value is 1 (ie CHR$(1) so that the first field starts at the first position in the record.

Suppose you PRINT#2,Y$ to the disk, where Y$ is a field, and you make X = 50 say. If you then PRINT another field into that record where X=30 then this will overwrite all information until the end of the record, and this includes Y$.

To summarise, when information is sent to the same record then the record is replaced from the position of the pointer until record end.

Suppose that the first field is 20 characters long and X=1 then one can PRINT this to the disk.

THe next field must start from position 21 or later and not over run the length of the record. (maximum in any case is 254 characters for the whole record.) Another way of doing this is to concatenate all the fields into one string.

Syntax R$=A$+B$+C$+D$ etc where A$="John Smith" and so on. Then set X at 1 and PRINT#2,R$ (assuming that OPEN 2,8,2 etc has previously been set in the program.

Dear Technical Editor,

I am an Amiga 500 owner with a problem.

I have recently bought a Star LC 24-10 printer and find that the fonts available through this printer are better than the fonts available through the software I currently own, ie Kindwords.

Can you please advise me how I print a letter, or any other doc using the fonts available through the printer as opposed to those available through the Workbench 1.3 or Kindwords.

Your assistance in this matter is greatly appreciated,
Yours sincerely,

D.I. Pinder

Dear D.I. Pinder,

You need a printer driver for the new printer. Check if 'KindWords' have an update, although this is unlikely since they cannot be expected to change a program for every new printer that is produced.

Printers that exist at the time that the software is created should cater for most popular printers.

I suggest that you contact Rob Pepper of Star Micronics Technical Help Dept on 0494-471111 (High Wycombe) who may be able to help you.

Dear Readers,

We know you've got news and views. We know you've got ideas and opinions. We know you've got gripes and criticisms.

So why not let everyone know?

Send us your thoughts (printable ones please!) and we'll include them on our letters page.

Write to us at 40 Bowling Green Lane London EC1R ONE — SOON!

Yours,

C.C.I.

COSMOS

Want to know all the Dr Who's ever made, when the next super nova is or when the Trekkien meet? Jonathan Littlewood reports

Cosmos is the Science Fiction, Fantasy and Astronomy section of the Compunet Online Database. It might seem strange to mix science fiction with science fact but in practice the result is quite effective.

GOTO COSMOS take the user to the main directory of the COSMOS area where an index of its pages is regulalry updated by the Compunet hosy computer. Currently the index runs to twelve pages and lists over four hundred screens of text as well as a few programs and IFF pictures.

The Astronomy sub-section (GOTO ASTRO) contains directories of space art, astronomy programs for the Commodore C64 and a variety of text sections. The newest of the text based sections is 'The Astronomer' run by the editor of the magazine of the same name. Although currently only a few pages this section promises to be one of the most important in the area. Under consideration is a scheme whereby news of astronomical discoveries will be issued on Compunet. This scheme is already running on two other British online systems and allows professional and amateur astronomers alike the chance to see short-lived and unpredictable phenomena such as supernova.

> ***"Playing about with this program soon leads to a real sense of perspective about what a tiny place this world is when compared with the rest of the solar system."***

In the space art directory there are both low and hi-res pictures for the C64. The low-res pictures can be displayed online as Compunet frames while the hi-res pictures are in the form of programs that need to be downloaded and run after logging off.

The Astronomy program area contains C64 programs to predict times of sunrise and sunset (there is rather more to this than meets the eye!), predict eclipses and take the user on a guided tour of the solar system. The latter is very educational showing the relative sizes and positions of the planets and asteroids and their orbits. Playing about with this program soon leads to a real sense of perspective about what a tiny place this world is when compared with the rest of the solar system.

The 'Other Worlds' sub-directory contains some twenty pages theorizing on the possibility of intelligent life in other solar systems. It explains how life is quite possible on other planets, how astronomers are searching for signs of other advanced cizilisations and puts forward some UFOlogists arguments. The writer has managed to porvide some very interesting food for thought without taking sides in this argument.

The remainder of the sub-sections of the main COSMOS directory cover a variety of Science Fiction media, from cult series such as Blake's Seven to the latest Star Trek movie, from science fiction book reviews to a weekly Sci-Fi news section.

The Sci-Fi reviews directory (GOTO SCIFI) contains a wealth of book reviews. New reviews are uploaded in the main SCIFI directory by a number of Cnetters whilst the Reviews Archive (GOTO SFA) is a database of older reviews. Organising the archive in such a way that all the books by one author are reviewed in one sub-directory has proven to be very useful. Having just finished reading Orson Scott Card's 'The Abyss' I was able to nip into the relevant sub-directory (GOTO 471759) and check out some reviews of some of his other works.

ROVER is a weekly look at Science Fiction and Fantasy on the box. A cleverly coded programme guide lists each Sci-Fi film and TV series on both national and regional channels in Britain. Each entry identifies the programme's country of origin, year of production and even whether it is colour or mono, plus enough information to set up the video recorder appropriately.

ROVER is a major piece of work as typically there are about thrity Sci-fi programmes shown weekly in the UK. Gathering together all the relevant information and adding the odd review is proving a very useful service.

Within the COSMOS area, separate sub-directories are provided for the main cult Sci-Fi television series. The Dr Who (GOTO DRWHO) area contains lists of all programs made and some discussion of the latest episodes. In the Star Trek (GOTO TREK) directory detals of the new 'Star Trek, The Next Generation' series can be found along with news of forthcoming Trekker meetings.

> ***"In the Star Trek (GOTO TREK) directory details of the new 'Star Trek, The New Generation' series can be found along with news of forthcoming Trekker meetings."***

Of all the directories in the COSMOS area my favourite is also the last. GEP2's Mind's Eye directory (GOTO MINDS) contains yet more well written reviews along with some very original Science Fiction short stories. One of the beauties of the Compunet system is that it allows new writers to get their works read and to get feedback fro their audience both through the voting system and electronic mail.

No description of the extraterrestrial parts of the Compunet database would be complete without mentioning the Fed Data Space. Federation II is an online Multi-User Game speicifically written for the Compunet system. As well as the game itself the Federation II directory (GOTO FED) contains hundreds of pages of background information, news, scandal, art work, music, maps and guides to the game. ***J.M.L.***

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Lattice C ver 5

We are delighted to be handling the best range of C programming tools currently available on the Amiga.

Lattice C 5 and Lattice C++ are now widely regarded as the ultimate C compilers - no others give you faster, more efficient programs ... and no other product gives you a more complete programming environment or a more impressive set of features:

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- Fully standard Amiga Compiler, with many ANSI features, including ANSI preprocessor, const and volatile keywords and function prototypes.
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- Comprehensive two volume manual with many examples and sample files.

Requires

- Lattice C 5 runs on the A500 up but will certainly benefit from 1Meg of RAM and, for large programs, a hard disk.
- Lttice C++ needs 1.5Mb memory and a hard disk.

Price

Lattice C 5.02 £229 inc., **Lattice C++** £299 inc.

HiSoft Devpac ver 2

We've said enough in this ad, let's hear what the press have to say about Devpac Amiga:

Editing, assembling, debugging and even program execution from the same place - not fantasy but something offered by Devpac. Fast assembly speed, powerful directives for optimising code, extensive conditional options, symbolic debugging ... Devpac has it all plus a lot more. It's packed with features and has everything machine code program developers could want.

ST/Amiga Format 12/88

With release 2 of Devpac Amiga, HiSoft has greatly enhanced its already excellent 68000 development system, making it quite indispensable for the serious programmer.

Transactor 5/89

Price: **Devpac Amiga 2** £59.95 inc.

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SUPER 72

Erik H Bakke C64

This program displays 72 sprites on the screen at the same time. As it is fairly short, it can be easily used with your own programs.

```
HAEP 10 FOR A=0 TO 47:READ B:POKE 49152+A.B:NEXT
IJDB 20 FOR A=0 TO 7:POKE 2040+A.13:NEXT:FOR A=0 TO 63
ENKO 30 POKE 832+A,255:NEXT:V=53248:POKE V+32.0:POKE V+21,255
HNAL 40 POKE V+6,100:POKE V+29,0:POKE V+2.50
NLJD 50 POKE V+46.15:POKE V+45,4:POKE V+4.75:POKE V.25
GMML 60 POKE V+12,175:POKE V+14,200:POKE V+28,0
JHFA 70 POKE V+17.27:POKE V+27,0:POKE V+39,3
IDDN 80 POKE V+40,10:POKE V+41,2:POKE V+42,12
MMOH 90 POKE V+43.8:POKE V+44.5:POKE V+8,125
BPMO 100 POKE V+10,150:POKE V+23,0:POKE V+33,0
FFOL 110 PRINT"[CLR][WHT]",,,"SUPER 72",,,,"72 SPRITES":SYS49152
CKEO 120 DATA 120,173,018,208,201,000,240,003,076,001
FHCE 130 DATA 192,174,018,208,232,142,001,208,142,003
DGNI 140 DATA 208,142,005,208,142,007,208,142,009,208
IBLE 150 DATA 142,011,208,142,013,208,142,015,208,238
FKML 160 DATA 005,192,238,005,192,076,001,192
S-ENTRY CODE = HOBG
```

TEAM DRAW

Ian Brown C64

A short program which can replace the old "drawing numbers from a bag" used for football competitions.

```
INOF 1 POKE53281.5:POKE53280.5:PRINT"[CLR][YEL]"
CHGK 2 PRINT"[SP5]PROGRAM TO PICK RANDOM NUMBERS"
CEFN 3 PRINT"[CD][SP6]FOR TEAMS TO PLAY EACH OTHER"
AMLJ 5 PRINT"[BLU]"
LMGK 6 PRINT"[HOM][CD8]TYPE A LETTER FOR EACH TEAM[CD]":INPUTW$
FKMP 10 FORN=LEN(W$)TO1STEP-1
KOGK 11 M=INT(RND(1)*N)+1
KDAE 12 A$=A$+MID$(W$,M,1)
MCHO 13 W$=LEFT$(W$.M-1)+RIGHT$(W$.LEN(W$)-M)
NAGH 14 NEXTN
CFLI 15 PRINT"[CLR][CD6]"
LBLB 16 L=1:R=2
PFGB 20 FORT=1TOLEN(A$)/2
GNGD 21 FORN=1TO10000:NEXTN
CEEL 22 PRINT"[BLU][CD][CR]TEAM [WHT]";:PRINTMID$(A$,L,1);:PRINT"[SP2][BLU] V[SP
     3]TEAM [WHT]";:PRINTMID$(A$,R,1)
DANE 23 L=L+2:R=R+2
BMKB 25 NEXTT
KKFF 30 FORT=1TO6000:NEXTT
BFME 32 FORT=1TO1000:NEXTT
AHNL 35 PRINT"[HOM][CD][SP2][YEL][SP11]PRESS A KEY"
LDNG 40 GETC$:IFC$=""THEN40
DADK 45 PRINT"[CLR]"
S-ENTRY CODE = HOFE
```

AUTO. CONFIG

Stephen Hardcastle C128 with 1541, 1570 or 1571

Two short programs for the C128. The first CONFIG.128 is a program to configure your C128 to your preferred settings, screen mode, colours and function key actions. This program can contain any Basic code you wish, only the program name must remain.

The second program AUTO. CONFIG uses the C128 autoboot feature to automatically run the program CONFIG.128 on power up.

HOW TO USE

Enter the programs and save to disk. Then place a blank disk in drive number 8, and run AUTO.CONFIG.

First the disk is formatted, asking for the disk NAME and ID. The program then writes the required code to the autoboot sector (track 1, sector 0) on the disk. This sector is then protected from being overwritten by other data.

You should now save a copy of CONFIG.128 to this disk.

```
10 REM-----------------------------------------------------------------
20 REM
30 REM PROGRAM NAME = CONFIG.128
40 REM
50 REM PURPOSE      = SET C128 TO PREFERED CONFIGURATION
60 REM
70 REM-----------------------------------------------------------------
80 FAST
90 GRAPHIC 5
100 SCNCLR 5
110 COLOR 6,1
120 COLOR 5,14
130 KEY 1 ,"DSAVE" + CHR$(34)
140 KEY 2 ,"DLOAD" + CHR$(34)
150 KEY 3 ,"AUTO"
160 KEY 4 ,"RENUMBER"
170 KEY 5 ,"TRON" + CHR$(13)
180 KEY 6 ,"TROFF" + CHR$(13)
190 KEY 7 ,"LIST" + CHR$(13)
200 KEY 8 ,"DIRECTORY" + CHR$(13)
210 DIRECTORY
220 NEW
230 END
860 REM-----------------------------------------------------------------
870 REM
880 REM END OF PROGRAM CODE
890 REM
900 REM-----------------------------------------------------------------
```

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The New Hacker's Handbook

by Steve Gold
by (Century Hutchingson Ltd. £9.99)

In the world of on-line communications there cannot be many people who have not heard of Steve Gold. His is a name which can strike fear into the heart of any Sysop worth this title. Mr Gold was — along with Robert Schifreen — directly linked to the hacking of Prince Philip's mailbox on Prestel. Applying his not inconsiderable talents, the illustrious Mr Gold has now turned his attention to less deviant pursuits and completely revised the *de facto* guide to modem communications — Hugo Cornwall's, Hacker's Handbook.

When the original text appeared in 1984 it was hailed as everything from "the answer to a hacker's prayers" to "a final end to data security." Needless to say it was none of those, it was a genuinely brilliant introduction to the world of electronic data communications. Mr Cornwall's preface to the fourth edition supports this, and ends by concluding most hacking is preventable — more by thought than draconian legal action. Nevertheless, using the word "Hacker" in the title ensured the book achieved instant notoriety and therefore deservingly massive sales.

In this new revision, Mr Gold has set a precedent, so-to-speak, by expressing the need for hacking and telling everyone how to go about it. He openly admits to hacking himself, referring to the practice almost glibly as a hobby carried out by individuals for personal gratification. He does, however, discourage the potential hacker from selling knowledge he has gained to the tabloid press. While it may boost the ego of the individual concerned, cheap sensationalism of a hacker's exploits could do irreparable damage to a company's reputation; on your head be it.

Caveats aside, the main body of text concerns itself with the whole world of computer communications, the principles involves and how it all works. Although the information provided could be used by some individuals for personal gain (as is proven by the liberal smatterings of hacker's comments) nothing secret is revealed. This is purely a collection of wisdom joined by Mr Gold's easily readable — and frequently lively — style; all a far cry from normal academic literature. The same could not be said of the language employed by some of the hacking elements whose unexpurgated communiques are reproduced here — do not leave this on Aunty Flora's favourite chair!

Topics covered are wide and varied. From the public BBSs like Prestel and Microlink, to hacking holes-in-the-wall, to the private BBS systems employed by governments; from the sort of equipment you need to get started — to the equipment needed to decode RTTY transmissions from ships etc. In closing, a set of useful appendices should answer most of the questions you are likely to ask. This is a book which deserves pride of place on the bookshelf of anyone — even those slightly interested in communications. If you have a modem, this book is an absolute must — and at under £10 for 194 pages, it is a steal …

M.S.

WIN…. WIN….. WIN….. WIN……

We were so impressed with the Hacker's Handbook, we decided we wanted to share it with you guys and gals……

The book itself is an absolutely essential prop to anyone interested in computers, and if you hurry one of these vital editions could be the next addition to your library — ABSOLUTELY FREE !!!!!

Just answer the following simple(?) questions, and the first five correct entries will receive their own special copy of the Hackers Handbook ! Oh — and yes — you also have to complete the tie breaker so get your creative cap on and stun us all !!

1. **From where could you receive a RTTY transmission (ie. ritty?)**
2. **Steve Gold was partly responsible for hacking into Prince Philip's Prestel Mail box. With whom did he conspire to do it ?**
3. **Who wrote the original Hacker's Handbook ?**
4. **Complete the following in no more than 12 words.
A Hacker is ……**

Answers on a post card please to reach us no later than February 15th,

CCI
40 BOWLING GREEN LANE
LONDON
EC1R 0NE

```
NBLL 7150 PRINT"[CLR]"
JHIL 7160 PRINT"[RED][CR5]POUNDS FEET TO METER KILOGRAMS[BLK]"
IIMK 7170 PRINT:PRINT
FPEC 7180 INPUT" ENTER NUMBER OF POUNDS FEET";C
JILC 7190 PRINT:PRINT
CICM 7200 CC=C*0.13826
EBNL 7210 PRINT C "POUNDS FEET = "CC "METER KILOGRAMS"
KKAC 7220 PRINT:PRINT
EOIJ 7230 D1$=""
LANF 7240 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
GJEI 7250 PRINT:PRINT" 1-ANOTHER CONVERSION"
CAGA 7260 PRINT" 2-RETURN TO 'LOAD' MENU"
JNMC 7270 PRINT" 3-RETURN TO 'MAIN' MENU"
FOLC 7280 GET D1$:IF D1$="" THEN 7280
EJCF 7290 IF D1$ <"1" OR D1$ >"3" THEN7280
FJNA 7300 IF D1$="1" THEN 7150
BCHI 7310 IF D1$="2" THEN 6460
IDNM 7320 IF D1$="3" THEN 100
BPEA 7330 PRINT"[CLR]"
IBPM 7340 PRINT"[RED][CR13]PRESSURE[BLK]"
PAPB 7350 PRINT:PRINT
LMDE 7360 PRINT" WHICH CONVERSION DO YOU WANT?"
CNFE 7370 PRINT:PRINT
HLOK 7380 PRINT" 1-KGRMS SQ C/MTR - POUNDS SQ INCH"
FKON 7390 PRINT" 2-BAR - POUNDS SQ INCH"
LKJO 7400 PRINT" 3-ATMOSPHERE - POUNDS SQ INCH
DAHC 7410 PRINT
LMJB 7420 PRINT" 4-POUNDS SQ INCH - KGRMS SQ C/MTR
PBDJ 7430 PRINT" 5-POUNDS SQ INCH - BAR
DBLJ 7440 PRINT" 6-POUNDS SQ INCH - ATMOSPHERE
MMJM 7450 PRINT:PRINT
OEMK 7460 B$=""
MNBC 7470 PRINT" SELECT ONE BY PRESSING THE APPROPRIATE[SP2]NUMBER (1-6)";B$
GLCE 7480 GET B$: IF B$="" THEN 7480
BKGO 7490 IF B$ <"1" OR B$>"6" THEN 7480
AMCM 7500 ON VAL (B$) GOTO 7510,7690,7870,8050,8230,8410
OCIE 7510 PRINT"[CLR]"
CIMJ 7520 PRINT"[RED][CR3]KGRMS SQ C/MTR TO POUNDS SQ INCH[BLK]"
HILN 7530 PRINT:PRINT
HPMN 7540 INPUT" ENTER NUMBER OF KGRMS SQ C/MTR";C
BOFD 7550 PRINT:PRINT
OPJD 7560 CC =C *14.22334
HOFL 7570 PRINT C "KGRMS SQ C/MTR = "CC "POUND SQ INCH"
DNFM 7580 PRINT:PRINT
GFHK 7590 D1$=""
BFBJ 7600 PRINT" SELECT ONE OF THE FOLLOWING:";D1$
NAEN 7610 PRINT:PRINT" 1-ANOTHER CONVERSION"
IDOA 7620 PRINT" 2-RETURN TO 'PRESSURE' MENU"
NIII 7630 PRINT" 3-RETURN TO 'MAIN' MENU"
DIBF 7640 GET D1$:IF D1$="" THEN 7640
IMNF 7650 IF D1$ <"1" OR D1$ >"3" THEN7640
FONB 7660 IF D1$="1" THEN 7510
IGIP 7670 IF D1$="2" THEN 7330
FHCC 7680 IF D1$="3" THEN 100
CHHH 7690 PRINT"[CLR]"
BIDP 7700 PRINT"[RED][CR8]BAR TO POUNDS SQ INCH[BLK]"
AAIG 7710 PRINT:PRINT
IGIJ 7720 INPUT" ENTER BAR";C
NNCD 7730 PRINT:PRINT
CJEC 7740 CC =C *14.504
KFBI 7750 PRINT C "BAR = "CC "POUND SQ INCH"
IILK 7760 PRINT:PRINT
```

Continued next month

THE NEW ENCYCLOPAEDIA OF SCIENCE FICTION

Edited by James Gunn (Viking Books £17.95)

Science Fiction has, in the past four or five decades, become one of the most popular forms of escapist entertainment.

Films like 'Star Wars', 'Close Encounters of the Third Kind' and 'E.T.', TV series such as 'Hitchhikers Guide To The Galaxy', 'Star Trek' and 'Dr Who', have all combined to bring SF to the notice of a public which, if it thought of science fiction at all, probably thought of it as the brainchild of H.G. Wells, for the film treatments of 'War Of The Worlds' and 'Things To Come', which turn up on T.V. with great regularity.

Books, films, stage musicals, computer games have all contributed to SF's pipularity and; in some universities in the United States, a degree course in the subject can be taken.

Authors Arthur C. Clarke, Isaac Asimov, Brian Aldiss are as well-known now as many other best-selling 'names' and their books sell not only as well but, in many cases, also for far longer than some of the writers of conventional fiction.

Some years ago Brian Aldiss, with David Wingrove, wrote the 'Billion Year Spree' – later up-dated to the 'Trillion Year Spree' – which was a History of Science Fiction that all enthusiasts rushed to buy. There was also a SF encyclopaedia, edited by Peter Nicholls, but, to my knowledge, there has never yet been such an all-encompassing encyclopaedia of SF as this.

'The New Encyclopaedia of Science Fiction', published by Viking Books at £17.95, is edited by James Gunn, himself an author of no mean ability, and is full of facts about the writers, the books, the films, the talents, all the many ingredients that go to make up the world of SF. But what makes this book so special is that the entries are not just the work of one man. There are contributions from over one hundred of SF's biggest and brightest stars, ranging from Aldiss on Alternate Worlds to H.G. Wells as seen by Arthur C. Clarke.

There are critiques of the myriad SF films, which also list their directors, producers, photographers, stars, even composers of the music; information on the many magazines which, in their time, have catered to the needs of SF fans; how the differing divisions of SF – cyberpunk, fantasy, cosmology, eschatology, (What's that? Read this book and you'll find out!), to name but a few – all fit in to the glittering whole.

Just to dip into it at random can bring to light fascinating facts. For example Gene Autry, the original singing cowboy of 'B' movies, once made a SF film called – would you believe? – 'Gene Autry and the Phantom Empire', which was later made into a serial. What makes the film even more notable, if that's the word, is that it also had two other titles, 'Radio Ranch' and 'The Men With Steel Faces'. How any one of these titles can be compatible with the others is a mystery in itself.

The book is well illustrated too, with author photos, art-work and examples of magazine and book cover designs in both black and white and colour. And if you think that SF is devoid of glamour take a look at the colour drawing by Michael Whelan, (seven times Hugo Award winner for illustration), for the late-lamented Robert A. Heinlein's book 'Friday'.

When Mary Shelley wrote 'Frankenstein' she unleashed a fictional character that has now lived on for over one hundred and seventy years. The genre she created has now come of age and this encyclopaedia is a fitting and authoritative tribute to its development.

D.M.

COGNIZERS

by R.Colin Johnson & Chappell Brown (John Wiley & Sons £14.95/$22.95)

The thought processes of the human brain are complex and impossible to duplicate. Computers are becoming ever more sophisticated but even the fifth generation cannot match, as yet, the rapidity of the neural network contained inside our skulls.

What we call 'thought' is the end product of electrical impulses passing a chemical message from one set of nerve cells to another. The brain distributes its processing tasks among billions of those nerve cells called neurons, which constantly send and receive information.

Until fairly recently the only computers able to mimic the brain's amazing ability, and then only in a partially successful way, were digital computers, although even they were not capable of the all round evaluation of complete thought. They were restricted by their own programs.

What are cognizers? They are truly machines that think. They have the ability to recognize objects and understand speech. They do not just follow a set of rules, laid down by a programmer, to achieve a logical answer to a problem, nor do they come up with 'does not compute' or 'syntax error' if it is outside the scope of their knowledge.

Cognizers can actually learn to recognize objects and understand speech and, if necessary, change their way of thinking to reach an instinctive rather than a mechanical solution. They are, in fact, synthetic minds.

The difference between a computer and a cognizer is that the former separate the functions of remembering and computing while the latter combine memory and processing which, as Johnson and Chappell point out, will thus 'enable them to transcend the bottleneck between memory and the CPU (Central Processing Unit) that is choking traditional computers.'

There is already, at John Hopkins University in the USA, a scientist, Terrance Sejnowski, working on a neural network simulator that can translate word processor text into understandable English speech. He teaches his system to read the text, not by programming but by allowing it to learn for itself. After just sixteen hours of training his model, called NETalk, could read the 100-word example text with 98 per cent accuracy. Its voice sounds 'almost babylike' but the rythms of human speech are there.

First generation cognizers are already coming onto the market. There are now plug-in modules or specialized computer software for PC's that add cognizing simulation abilities. The ony thing restraining progress is the fact that many companies lack experts in the cognizer field. They need research engineers who are familiar with neural networks of the brain. And there are not too many of those around at the present.

As the authors propound perhaps the best cognizer system will, eventually, be a neurocomputer. A hybrid in which the computer checks the cognizer for logical mistakes and the cognizer keeps the computer from irrelevant tangents.

If you want an easy-to-read-and-understand book on the subject this is not it. My own (human) neural network had a hard task taking in many of the paragraphs at first reading, but the fascination of the unfolding story kept me ploughing on. It was well worth the effort.

D.M.

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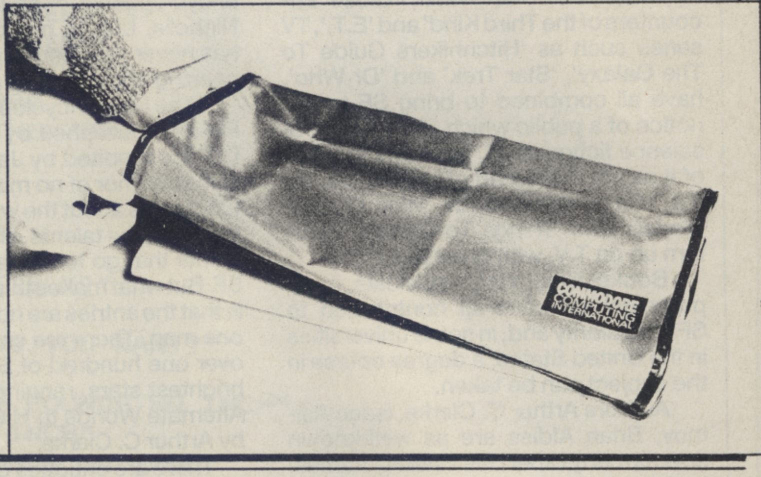

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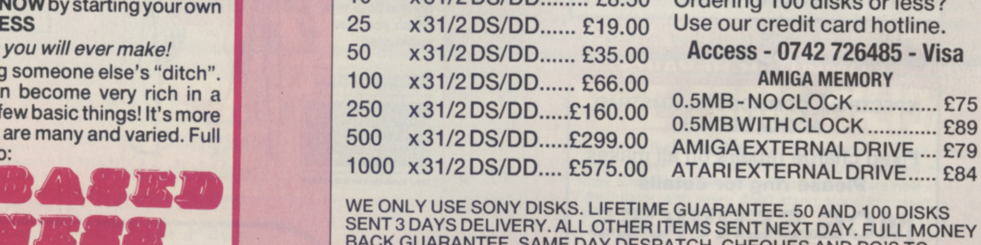

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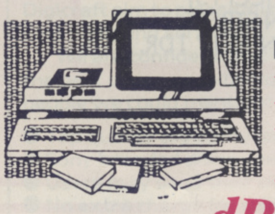

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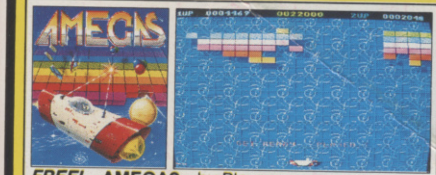
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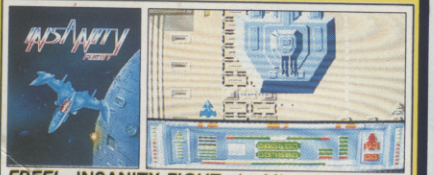
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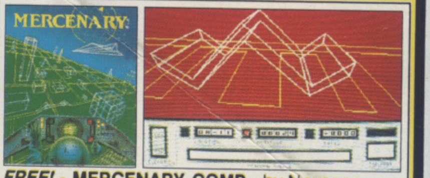
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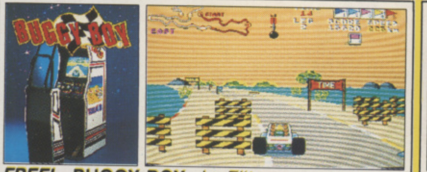
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